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Nov.-Dec. 1984
Vol. 1, No. 2

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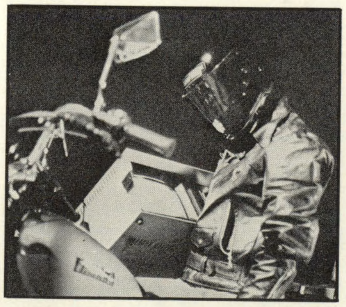

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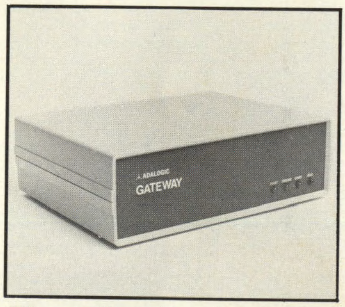

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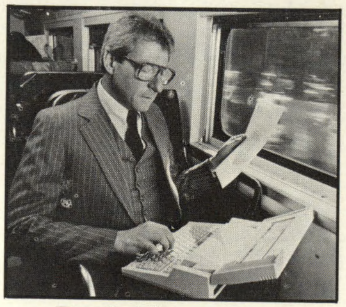

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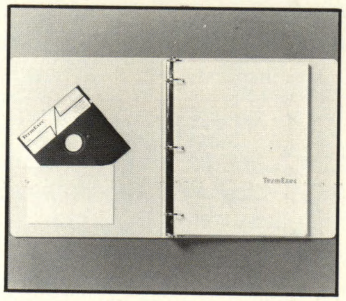

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INSIGHT

With a little help from my friends?

A friend once told me he saw no real use for bulletin board systems, other than as havens for pirates and their illegal activities.

Another friend, just a week before, said he wanted to learn more about BBSes because vegetating in front of the TV just wasn't for him anymore. He felt he had better uses for the tube.

I gave both opinions a lot of thought, and just thought I'd try to comment on both.

In the very same issue, this, in which we crack open the case on the illegal doings of software pirates and what they are doing to kill the software industry, we also explore the inner mind (or come as close as we dare) of a typical (?) bulletin board system operator. No easy task, either.

Let's examine software piracy, for instance.

As Bill Korba explains in his excellent article on telepirates, of every 10 software programs currently in use, only *one* was purchased. Millions of dollars are wasted to the pirate as he sets up a bulletin board chiefly for the purpose of distributing expensive software programs to his "friends" for free.

In the meantime, software companies lose millions of dollars on lost sales—just so a pirate can help his "friends."

Larger companies have the resources to fight this cancer. Smaller companies do not. Larger companies have the resources to continue to develop and manufacture new and different programs—thus staying ahead of the thugs (I mean, pirates). Smaller companies get knifed—smaller software manufacturers cannot absorb this ruthless copying. They die a slow, terrible death. And what happens to the program that, once marketed, could have changed the face of computing forever—but was stopped because it was stolen by everybody and his brother? What is this doing to efficiently kill any chance of a home software industry, and to home computing in general?

Do pirates know what they do?

The statistics are ruthless in this continuing horror story: Commercial software companies are the victims of what is estimated to be a $30 to $50 million bootlegging market—software "cracked" and unlawfully sold or given away, including game software of all types, and dozens of specialty packages of all kind, from word processing to spreadsheets. Large and small software manufacturers understand piracy as a clear and present danger to their future—with possible losses approaching as much as 50 percent of their sales!

The most dangerous question: Why is this happening?

What has to be done to stop software piracy? How to stop it when more and more bulletin boards are set up precisely for the purposing of pirating?

Unfortunately, no legislation has yet been brought against the home software pirate. Cases are pending in court now for illegal copying and marketing of custom business packages—yet nothing so far for commercially available software. So far, no cases have been brought against pirate boards. And why doesn't the FBI pay a visit to them?

What does Entry propose as solutions to software piracy?

Perhaps software companies could embed copy-protection schemes into the software of sufficient strength and uncrackability—and allot about three, and only three copies, of each package it sells to the consumer. (Three: One as the master, one for backup, and one for hard use.) That would sufficiently slow, if not stop, widespread pirating.

Or, perhaps the companies could attach some device to a port on the computer which master-identifies with the software which is unique to it—thus helping to stop pirating.

There must be other, more creative ways in which to solve this problem. It is only a matter of time, because the time software manufacturers devote to this will determine their continued survival.

Now, for my other friend who has found better uses for the tube: Alisa Lowden's "Welcome to the electronic powerhouse!: OR: How to start a BBS" reaffirms the true and rewarding reasons for operating a bulletin board: To help people achieve that rare state of heaven possible with the electronic wizardmachine.

All this for you. You see, at Entry Magazine we do the best to help *our* friends.

Andrew Andrews

Andrew Andrews
Publisher

P.S.: A quick reminder: We're not changing our special charter rate, however (pay now and save!). Just mail in the subscription card stapled to the inside of this magazine, or save by enclosing a check with your order.

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SPECIAL FEATURE

Telepirates: Criminals of the Computer Age

by William L. Korba

Many people believe the pirates of yesteryear were global adventurers and opportunists, who would board a vulnerable ship, plunder cargo and pillage treasure.

Not unlike the pirates of the past, modern telepirates have a worldwide theater of operations. The telepirate travels across the ocean not in some great vessel, but through transatlantic cable. He plunders through the ocean of space at the speed of light via telecommunications satellites and microwaves.

Today's pirates cross thousands of miles through forests and desert searching for cargo "locked" inside vulnerable computers. They overpower security systems to destroy or alter databases. Unlike the pirates of old, modern pirates accomplish this without leaving the electronic command center of their "bridge" (otherwise known as their bedroom).

These modern pirates gather in safe "harbors" (often called pirate bulletin boards). This is where they exchange their booty, which ranges from copies of the latest and hottest pieces of software and telephone numbers to access codes of governmental and corporate computer systems. They also share information on how to avoid paying for phone services. They call this activity "phone phreaking."

New technology has made it possible to combine the communications capability of the telephone with the storage, retrieval and manipulation of data capability offered by the computer. This new power has opened new avenues of illegal behavior.

The requirements for entry into this new area of illegal behavior have changed radically over the years. At one time, it required a great deal of technical expertise and much expensive and complicated hardware. The early participants generally worked as highly skilled data processing professionals for large industry or government centers.

Tools of the trade

Unfortunately, it has become much easier and less expensive to gain entry to these unsavory behaviors as modern computer technology has evolved. The hardware needed today can be purchased for as little as $225—a bottom-of-the line computer and modem. Very little technical competence is required. Little or no esoteric knowledge of computers, telephony, or disk protection schemes is required because of the vast amount of ready-to-run phone phreaking software that was written by two or three highly skilled and sophisticated phone phreaks. This software is widely distributed via pirate boards nationwide.

Two major types of software are currently in distribution. The first is called "hacking software." These programs are equivalent to the tools used by a burglar to pick locks. The software uses algorithms to generate a series of passwords or access codes until a valid code results.

Phone phreaks dial the local access port of a long distance telephone service. The "hacker program" generates codes in a format of valid codes and compiles a list that should work. The phone phreak then posts this list on a pirate board. Calls can then be charged to the account number "hacked out" by the computer.

The second type of phone phreaking software offered by pirate boards is called "operator software." This software allows a computer to generate the tones needed to route a phone call through operator trunk lines and thereby bypass the billing apparatus. This technique is called "blue boxing" (named after an electronic device that was used during the 1960s to do the same thing). Tone generating programs are also used to simulate sounds made by coins in pay phones.

So, the new "telecriminal" can do things that *appear* to demonstrate a high level of skill and technical knowledge; however, very little actual skill or competence is required. Peter Waal, vice president of GTE Telenet Communications in Vienna, VA, addressed this issue as follows:

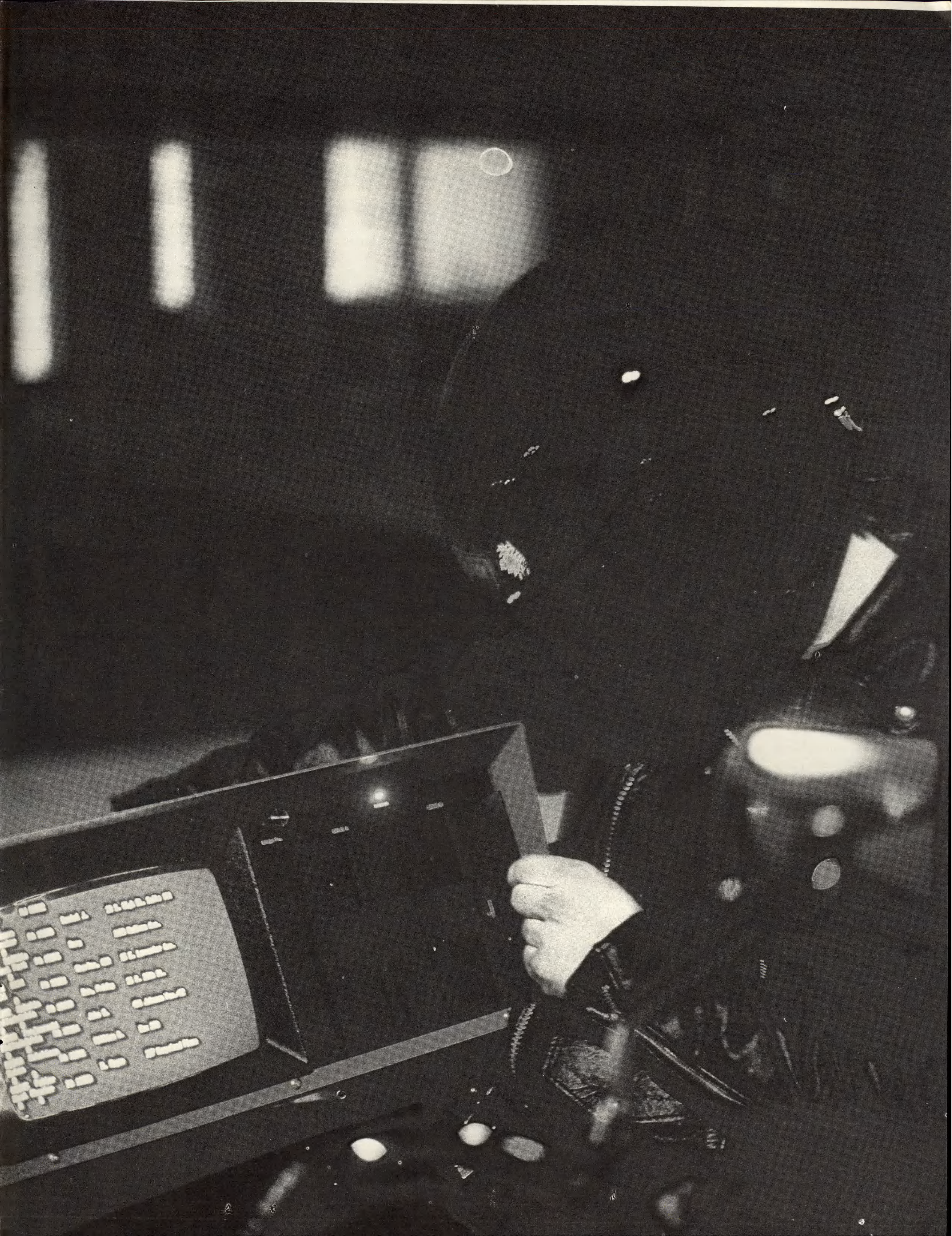
"The technical ability to commit trespass [using computers] is not great. The personal computer does all the work. The skill involved is the computer age's equivalent of hot-wiring an automobile. . . . By combining the ubiquity of the telephone with the capability of the personal computer, a whole new dimension of criminal activity becomes possible."

Reasons and enticements

In addition to the ease of participation, there are other reasons and enticements for people to become involved in illegal phone phreaking and telecrime. One is the need for status. Many high school students gain status through excelling in academics or athletics. Strangely, phreaking is also becoming a "fast track" to high status.

When a phone phreak shows his friends what can be done with a computer and a modem, he gains instant identity as a member of the "electronic elite" and can feed off the romantic image created by television and movies such as "Mission Impossible" and "WarGames."

Among fellow telepirates and phone phreaks, a person gains a national reputation and cult hero status for breaking into a large number of systems and posting passwords on pirate bulletin boards; or becoming a source of a large quantity of pirated software.



There is a certain amount of status involved in being a member in an exclusive club of any kind. The pirating subculture is no exception. There are many such organizations throughout the nation. One of the most infamous is the "414" club named after the area code in Wisconsin where it was headquartered.

The arrest of people involved in the 414 Club got extensive national media coverage last July. This coverage corresponded to the hype and interest generated by the movie "WarGames" also playing around the country at that time.

The criminal mind

The phreaking movement presents several levels of criminal challenge. For those who are junkies on their own adrenaline, there is the challenge of breaking the law and avoiding getting caught.

One of the clever ways to avoid capture is by running through several common carrier lines. A telecriminal can make it difficult to trace his call if he "snakes" his way around the country by dialing through a large number of long distance telephone company and service access ports. They can even route their call to Europe via transatlantic cable and return via satellite.

Software pirating is another major motivation for phone phreaking. Programs can easily be transmitted from one pirate to another over telephone lines. This can become very expensive because the less expensive modems currently being used with microcomputers transmit and receive data at only 300 baud (300 data bits per second). At this rate of data transfer, it may take up to 20 minutes to ½ hour to transfer the contents of an entire diskette from one pirate to another.

If the transmittal is coast to coast, as is often the case, then the telepirate would have a costly phone bill to pay. The phone bill may even be more than the cost of purchasing the diskette from an authorized software vendor. This is why our "swashbuckling" pirate decides to charge his call to some unsuspecting member of the general public. According to INFOWORLD (March 26, 1984), "The theft of long distance services is about $100 million a year nationwide, and piracy of software is easily that much."

High-tech Jesse James

Some of the hard-core bulletin boards even have information on how to commit credit card fraud—complete with valid account numbers lifted from computer systems of banks.

Entering the computers of banks under the guise of exploring or the challenge involved has resulted in some hackers attempting to rob banks, electronically, with the same casual attitude as if they were pirating a copy of a $600 business program; or calling long distance on someone else's phone account. The principle is the same; it is only a matter of degree.

As a result of the sometimes high cost of computers and modems, phone phreaking is a crime that has mainly affected middle class teenagers (many of whom would never have gotten involved in crime at all if they didn't have a computer).

Many of these same people would not dream of stealing anything from a store or doing anything that might cause physical harm to someone. Yet when it comes to phreaking, many teenagers have not developed an appropriate ethical or moral code. Much of our personal value system is the product of the teaching we received as young children. People are taught that stealing from a store is wrong and that harming other people is wrong. Yet parents, religious organizations and schools have never taught that phreaking

Thwarting pirates

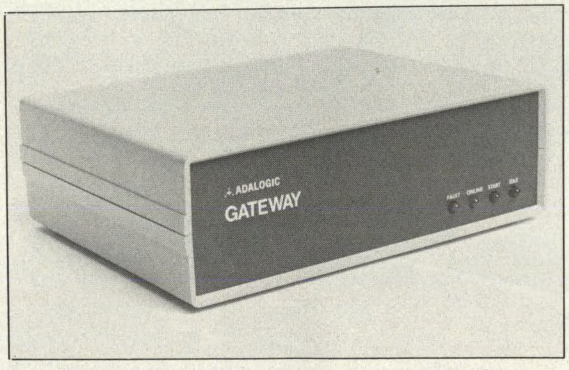
Every year both software programmers and manufacturers lose millions of dollars on pirated software. What can you do to protect your BBS from pirates who may abuse your system and, worse, vandalize it?

Schemes range from expensive devices that insure your system's security to simple programming techniques for the novice with telecommunications software manipulation know-how.

The first is a nifty little security device known as the "Gateway," from Adalogic. The stand-alone security system provides protection against computer intruders. If the caller/user does not enter his/her ID code and password within three attempts, and a defined time limit, he/she will be disconnected. However, the system carries a large price tag—$385. It connects to any RS-232 full duplex port, and supports use on either 300 or 1200 baud.

A second way to protect your board from intrusion is by spreading the word about so-called "phreakers," and "takers." "Phreakers" enjoy making other people's systems crash, while "takers" help themselves to all of the knowledgeable information on your bulletin board. By letting others know who is causing the problem, and what they are doing, as a system operator (sysop) you can either devise a way to stop them, or remove them from your bulletin board altogether.

Lastly, several programs are available from reputable companies that will check each user identity separately and individually. These programs are available from Micro-Margin Software for $22 apiece, or $80 for all four programs.



Each time a user calls in he she must enter his/her ID number and password. Next, the programs will ask for the user's first and last names, age, height and weight. If the sysop desires, he can also ask for the caller's phone number and hair color. The programs are so intricate that they take up three disks altogether. And, not only do they ask for the above information, but also provide a 25-question survey before the caller can gain access. After all that, the caller must gain security clearance from the sysop himself to advance from level 0 to level 6 progressively. (Keep in mind, however, that only the sysop himself and his closest friends would have a security clearance of level 6, since this is the only level that one can copy software.) The programs run on either 300 or 1200 baud.

—*Andrew Edelberg*

and pirating are wrong. In fact, some teachers collect pirated software from students in their classes. This does not help the development of the appropriate value systems in the students from whom they acquired the software.

It is impossible for parents, schools and religious organizations to address these issues if they are relatively unaware of the size and scope of the problem. Even governmental agencies are confused about the legal ramifications of much of this behavior. Much of the law required to resolve these issues has yet to be written.

Even corporate America is just now working out an ethical framework within which they can function. It is a time when computers are being sold by large companies that have copied the operating system from another manufacturer. When software is being indiscriminately copied by some school systems and distributed to each school within the district, students are generally sophisticated enough to recognize that the software has been pirated.

Many rationalizations

Pirating and phreaking seems to be a greed-driven system. It is easy for participants to justify. Some argue that books, movies and muscial recordings are fixed media. They never vary. You can read a book, watch a movie, listen to a record hundreds of times and they will always end the same way. Therefore, these documents can and are protected by copyright.

Software, on the other hand, varies. A personal can play a computer software game many times and end up with hundreds of different outcomes. Therefore, it is argued, that individual's actions play a major role in determining the outcome; if that is so, then aren't they a co-author?

One of the ironies is that pirating has probably been a major force in launching the computer industry. Many people have probably purchased computers because they had friends who offered to give them copies of much software, that if purchased might even have cost more than their homes, cars and boat combined.

Other rationalizations include the notion that because most software must be purchased sight unseen and without benefit of a trial period, that they want to use a pirated copy as an evaluation copy to see if they really want the software. They claim that if they do, they will purchase a copy. Most of these people have boxes filled with evaluation copies, that they refuse to erase, even after they decide they don't want them after all.

Because of this thinking, authorities say there exist as many as ten pirated copies of each program disk sold. The attitude, "Why should I purchase a piece of software when I can get a copy downloaded by modem from a pirate board or my next door neighbor?" is having a devastating effect on the software industry. It will prevent new software from being developed; it will help bankrupt existing software specialty stores, and stop new ones from starting.

A new technology

Pirating on the high seas was a problem for societies entering the shipping age. It took new technology to draw the era of high seas piracy to a close.

Software pirating and phone phreaking, however, are problems for a society just entering the computer age. It will take new technology to solve this problem. That technology is already being developed and it will be to everyone's advantage.

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BBS Phreaking: With intent to harm

by Alisa L. Lowden

Let's examine a popular "phairy" tale:

Phone "phreaking"—or calling long distances for free by breaking into unsuspecting systems' or individuals' telephone accounts—is a highly respectable pheat which requires great cleverness, coolness and skill. Many computerists, particularly those young enough to "get away with it," perform this mildly unlawful practice, calling bulletin board systems (BBSes) and people all over the country for absolutely no cost. It works out phine phor everyone, since the phone companies will never know and don't miss the lost income anyway, right? Sure! Besides, it's real cool to be so smart and daring . . . right?

Wrong! The above is *certainly* a PHAIRY tale! Cheating the phone company, any phone company, is a federal offense. Anyone doing so can and are prosecuted regardless of age or intent. Phreaks are not only much less clever than they think, but they are also very harmful in many respects. They cause an unbelievable profit loss to every telephone service they crack, whether it's MCI, Sprint, or any smaller independent company, risking rate increases for the honest members because of these losses. They endanger the well-being of every computer service or individual person that they call while in the act of phreaking, since it is becoming easier and easier to trace the cheater's whereabouts by the numbers the phreak calls.

Demise of Del-Ches

A case in point is the recent demise of the southeastern Pennsylvania Del-Ches BBS, run by Peter Rucci. An independent phone company had experienced more than $1200 worth of damage due to someone who had illegally gotten ahold of an account password, and although the phreak's own telephone number did not get back to the company, the numbers that the phreak called DID. It seems that he called every bulletin board in the nation which had a section for his particular brand of computer, leaving various encoded messages about phreak numbers and passwords. One of these was Del-Ches, and it was Del-Ches which the phone company contacted.

Rucci voluntarily submitted all the BBS records to the company, and has been printing out and examining his disk log in an attempt to match up the times the account was violated by the phreak with the times the phreak was using his BBS. Since he requires all users to include their name and address when they log on to his system, Rucci hopes to find some clues this way, although it is likely the phreaker used a pseudonym.

The combined efforts of Rucci and the independent company have pinpointed the area in which the phreak is located, and are working on narrowing it down to a specific street address. When the phreak is found, the owner of the phone company fully intends to take the person to court.

Since Rucci started his board in January this year, "everything was fine until the beginning of May. I started to get a lot of strange phone calls from people accessing the board with different passwords and since the computer that runs the board is in my den, I can hear and see what's going on there whenever I'm around. I saw a lot of people logging in with encrypted messages about boards and numbers, and of course I would delete them. They regarded specific boards, which I don't want to name but there are some which do encourage this, and the message said to leave replies on these other boards. I had a couple of people who left numbers and access codes to university computers, which are not published since they contain instructors' records, grading, and so forth, and telling how to get into these systems. Of course, they were all deleted.

"The culmination of all this is that somewhere between the middle of April [1984] and the time I closed the board down, there was someone who was accessing this board and leaving messages, in a code, to people who had accessed the board maybe once or twice; MCI and Sprint access code numbers. I was contacted by a [third-party distributor] telephone company from a small area outside of Philadelphia that had found an individual that was accessing his system with somebody else's code, and had called a specific SIG on BBSes, on every board in the country that had one, with the access codes. We now know where the individual lives, the extension, and we've set up a dummy line for him. We know his password, which extension he's calling from, his general area and that he uses a portable computer. After all this, I just decided it [the board] wasn't worth the trouble. I just received another printout from the phone company yesterday, and this phreak hasn't let up at all."

Stopping phreakers

Despite this discouraging disappointment, Rucci plans to start another, private board as soon as he can. He and every other system operator (sysop) as well have become aware of the government's increasing fight against computer crime, of which phreaking is one of the most prevalent. As more people become aware of the legal technicalities and danger of phone phreaking, it is to be hoped they will stop.

As an MCI or Spring subscriber, all you can do is to be very careful to keep your MCI or Sprint account password absolutely private (i.e., do not tape it to the top of your phone, no matter what trouble you have remembering it), and to immediately report any major discrepancies which appear on your bill. Sysops of BBSes who see phreaking activity going on on their boards can either ask the offenders to do it elsewhere or, to make a harsher move, report the phreaker to whatever authorities are involved.

As Rucci stated, it is true that some BBSes cater specifically to phreakers and pirates, but there is not much to be done about these boards, since the sysops (phreakers themselves) are reluctant to stop this business. Most do not require personal information to be perfectly accurate in the logon process; pseudonyms are the norm, just in case.

The "art" of phreaking smacks of immaturity and false cunning; no good comes of this practice, least of all for the phreaker himself, regardless of the temporary gain. Everyone loses.

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Will the WarGames Syndrome kill BBSes?

by Eve Simon

The facts are clear: On May 16, 1984, the Mog Ur's HBBS in Mission Hills, California was shut down. Both the bulletin board system's (BBS's) hardware and software were confiscated, and the system operator (sysop) was charged with conspiracy. (Although, as of press time, the Los Angeles county district attorney declined to file felony charges against the operator—though the sysop could be served with a misdemeanor.) Why? The "WarGames Syndrome" had actually struck.

When the movie "WarGames" was barely a dim light in a screenwriter's mind, nobody ever imagined the movie, which featured a Washington state high school student breaking into a top-secret NORAD computer and starting World War III, would end up being a negative example of "telecommunications gone too far" in the computer world. After WarGames mania spread across the nation, many people really began to think seriously about the hazards of attempted computer and telephone fraud. Questions such as "Could someone cause a nuclear war by a few keystrokes?" or "Has anyone besides me seen and/or used my Sprint code?" have arisen. Controversies have also been stirred up by the movie. One question asks "On whose shoulders should the responsibility of illegal information transaction rest?" The law points its finger in the direction of the friendly neighborhood sysop.

Information at finger tips

Most of the information available for computer telephone fraud is at the finger tips of anyone who has a computer, and uses BBSes. "Cracking" (breaking into computer systems with system passwords and account numbers) and "phreaking" (stealing telephone services' codes to gain free long distance calls while charging someone else, or the phone company) information is often posted for public view via a message on a BBS.

Many times, however, the authorities discover the violations, and confiscate the information. However, instead of the hacker waking up one fine morning and finding the FBI and telephone company looming over his head, the sysop in charge is given the distinct pleasure.

What happened to Tcimpidis?

To give an example, in the previously mentioned case in California, the sysop was Tom Tcimpidis, a computer programmer and consultant. When a Los Angles Police Department and two Pacific Bell officers waved a felony search warrant in his face, Tcimpidis apparently had no idea what he had done. Supposedly, unknown to him, two messages containing a credit card number and two Sprint access codes were left in a special section of the Mog Ur's HBBS, called "Underground."

A Pacific Telephone representative had logged onto the system earlier, and when he recognized the codes, he reported them. The user who left the messages had posted them under an option of leaving anonymous messages. The user specified that the messages stay up for a short period of time, and after that time, the system should automatically kill them.

Unfortunately, Tcimpidis never saw the messages, because they were deleted by the system before he had a chance to delete them himself. When the officials arrived, Tcimpidis searched his disk to find the user's name, which he turned over to the police. But it made no difference to them, for under the law, Tcimpidis was still responsible for the information.

In the raid on his property, almost $10,000 worth of goods was confiscated. Tcimpidis lost his Heathkit terminal, monitor, 5¼-inch floppy disk drive, and about 150 5¼-inch disks to the police.

There was other computer equipment in his home, but he persuaded the police not to take the computer hardware and software that he used for his work. Tcimpidis has acquired a lawyer who thinks that his client's rights have been violated.

Matter of responsibility

The major outcry now being heard from both the BBS community and the general public has to do with the matter of responsibility. Some people believe that the kind of cracking-down which happened in California is necessary to stop the users' reckless behavior on BBSes nationwide.

Others think that, indeed, the heedlessness should be stopped, but not necessarily at the sysop's expense. Sysop Kurt Wesley's VF-80 BBS has been up for three years, despite many attempts to crash it.

Kurt is deeply concerned about government intervention in BBSes. He states, "Any attempt by the government or other legal beavers to make a sysop responsible for messages of others will surely cause us sysops to close down." He adds, "This will hurt this new technology and put us back several years."

The question remains: Who has the full responsibility for messages on BBSes? On the one hand, the phone company does not accept the liability for the obscene phone calls which pass through its lines, nor can the post office be held responsible for a letter sent from one person to another. The electric and water companies, in addition, are not blamed for a blackout or shortage.

On the other hand, who will protect the interests of the public as a whole? Self-policing the boards is necessary for all sysops, although it is often not possible to read *every* message on the boards. Making the sysop liable may be unfair, or even ridiculous at times, but the law is the law.

It will be up to the *users* of the BBSes themselves to save their boards. This will involve refraining from leaving unsuitable material on a public board, and the elimination of illegal information being transferred from one user to another through BBSes.

Finally, the end result of the WarGames Syndrome can be determined by the users themselves while on-line, by being responsible and ensuring the success of BBSes, or by being careless and ultimately causing the downfall of the entire BBS network.

Welcome to the electronic powerhouse! OR How to start a BBS

by Alisa L. Lowden

Most users who have become enamored of computer bulletin boards (BBSes) sooner or later dream of running their own by becoming a system operator (sysop). How glamorous, to be a sysop! . . . to watch the computer world fly by on your monitor, to converse with local enthusiasts about subjects odd and wonderful, to wield absolute power in your mighty electronic world . . . .

Charged with the impressive duty of entertaining, educating, attending and just plain watching all the users of the BBS, the sysop must exhibit some amount of maturity and grace to complement his equally necessary intelligence, interest and leadership abilities.

One of the few drawbacks to running one's own systems, however, is the money required to keep up the software and hardware. But don't let that stop you—it doesn't destroy the personal satisfaction that can be attained by running a BBS.

I used the medium of electronic mail on various sysops' own BBSes to conduct interviews concerning this topic. The thrust of my questions regarded that particular sysop's own personal experience in heading *his* BBS. (Unfortunately, only men responded to these questions.) The responses were varied and quite informative.

Bucks Telematics

Bucks Telematics BBS is operated out of Dr. Richard Press's office in Bucks County, Pennsylvania. The good doctor was happy to respond to my queries about bulletin board beginnings, and offered some interesting personal views on the subject.

"Running a BBS is a unique avocation," says Press. "Here is an activity that is satisfying on several levels all at once . . . .The BBS provides its operator with a way to share his or her hobby with many, many other people. Communications are suddenly present with the outside world, and links are made with interested people—from the extreme computer nerd who only talks in terms of megahertz, to fumble-fingered beginners, to avid telecomputerists who use their machines as a substitute for ham or citizen's band radio, and to 'typical' families using their computers for their budget, taxes, mailing lists and word processing as well as bulletin board hopping."

"As a project, running a BBS is a black hole for your time," he says.

Press understands the labor involved. "You stop spending money after you acquire the hardware and software, but you never stop spending your time taking care of your system. You are enslaved to the chores of housekeeping on a daily basis. Old messages have to be removed to make room for the new ones that will surely come. Disks have to be backed up, and replaced, on a regular schedule. Drives must be cleaned. User logs must be attended to (especially if you ask your users to register their name and address . . . a whopping filing job, and maybe even a liability, should the authorities decide they need access to your user log)."

Messages go back and forth

"The type of telecommunications observed on a BBS are very interesting," he says. "There are many conversations that might seem more properly carried out on the telephone. However, even though the correspondents are within local dialing range, the messages go back and forth without embarrassing pauses, without regard to the availability of the recipients, and without regard to the time of day (or night, as is more usual). People can now get something off their chest instantly—they just get on line and type away!

"On the other hand, there are plenty of messages that are informative to the viewing public. For example, most of the messages that are in regard to computers are left in public view so others can learn as they sift through the messages. On the BBS I run, there are some very specialized message areas concerning medicine and doctors, as well as the usual ones about computers and general topics. These contribute to the uniqueness of that board."

To Press, BBSes are unlike each other, unique in their own way. "Some are like comic strips, you never stop laughing until you hang up! Then there are the havens for hackers and phreakers, where all subjects are discussed in hexadecimal; and, of course, the ones that seem like adventure games."

A big problem facing all sysops is the "unsavory" practices of certain types of callers, names well known. Press says the BBSes are working together to rid themselves of "unsavory callers who have discovered that possession of a modem allows them to spread filthy and disgusting comments nationwide at the press of a key." Press says the callers "are clever beyond ordinary imagination, and often manage to ooze through the most careful screening procedures." Sysops everywhere are compiling lists of known bad names and circulating them widely.

"The profanity-hurlers almost caused me to abandon my

BBS!" says Press. "Fortunately, bolstered by support from other area sysops, I was able to discourage them to the point of being slight headaches instead of throbbing migraines."

Press has strong views of the future BBSes. He says, "My own feeling is that, in the near future, all homes will have the ability to store text messages via telephone, for local or remote retrieval. That, of course, will not constitute a bulletin board system. It will, however, create familiarity with telecomputing. Such familiarity will encourage users to 'reach out' even more, and they are going to need places to gather electronically."

Dunjon-80 BBS

Another system operator with whom I communicated is Sarnhith Tpious, the inventor of Dunjon-80, a fantasy role-playing BBS. He is employed at a scientific research company, and his hobby occupies much of his spare time at home.

Tpious says, "While I was attending LaSalle College as a Computer Science major, I discovered a free service called a bulletin board system, run by people who had computers they didn't need full-time access to. Back then, PACS [Philadelphia Area Computer Society] ran a BBS on an Apple, DVCS [Delaware Valley Computer Society] ran a TRS-80-oriented BBS, VF-80 was up and Pete Essl ran Villanova RBBS. I figured that if all of these people could do it, I could, too . . . without buying a commercial package.

"I wrote 'Minimal-80', a 16K RAM-based non-disk oriented BBS that I ran off and on for months, while a friend of mine and I wrote the original Dunjon-80 BBS program. He had disk drives, a luxury I couldn't afford. He also had massive hardware problems that prevented the original Dunjon-80 BBS from ever starting.

"I was graduated from college and got a job. With the job came the money to buy the long-awaited disk drives. I ran Minimal-80 during the day and worked on Dunjon-80 during the night.

"For six months, I worked on Dunjon-80. I refined it, I rewrote it twice, and generally I got it ready to take callers. Around April 1983 I decided to let people see it. After that, I didn't have the heart to take it off the air, bug-riddled as it still was. I just fixed them one at a time until I got rid of all the bugs."

In the beginning, Tpious says, "The biggest problem I had was money. People just don't appreciate how much it costs to keep a BBS running."

Tpious says now he uses "six diskettes every month. When they are removed from the drives, they are ready for the trash. They really wear out. The Bell break-up means the dedicated line I have for the BBS costs me more. The hardware is old, and I have learned to fix it quickly.

"[Printer] paper is a major expense. I go through a box a month. I recently purchased 80-track disk drives so the BBS would have more disk storage. All of this costs money. I have $2000 worth of hardware dedicated to the BBS that I cannot use for anything else. You have to be well off and own another computer if the BBS is going to succeed as a 24-hour venture."

Tpious explains that, to help support their BBS, some sysops sell hardware, software, or supplies. "I do not. I pay for it all out of the joy of meeting people. I've met a lot of really nice people on BBSes and, as they say, friends are what make life worth living."

Wizard's Court

Noel J. Bergman, head of the CP/M Users Group of PACS and a senior student at the U. of Pennsylvania, recently set up Wizard's Court, running on Citadel BBS software.

Bergman says, "I started my BBS because I thought I could offer something to bulletin board users that they're not necessarily getting elsewhere. My system is different from the ones that are currently in vogue, like TBBS (The Bread Broad System) and some of the others."

Bergman is proud of Wizard's Court. "I've received compliments from people who find that it's easier to get around in. I don't think the current version offers quite as much capability, necessarily, as TBBS, but it's good. It's written in C-language, and you can get it from the C Users Group (of PACS), since it's public domain."

Bergman's advice to a would-be sysop? "If you want to start a bulletin board, I recommend that you have *two* phone lines; it's just unbearable if you don't." He explains that if you have only one phone line, and if you're going to have a BBS up, "as long as people are using it, you can't call out and people can't call in (voice). I suspect that a lot of people who try to run bulletin boards and fail, fail because they just can't stand sharing the line."

Have back-up copies

What about if a caller tries to "crash" your system? What if a sudden power surge knocks its way into your program, and destroys it? What if?

Bergman's answer? "If you're going to run it on a floppy-disk based system, make sure you have back-up copies of your system software. The nice thing about running it off a floppy disk is that if someone breaks security on your system, they're not going to hurt anybody. They can't damage your hardware, certainly, over the phone line; that's a myth. The only thing they can do is destroy those copies of the disks that are in the drives at the time.

"On a hard-disk system, however, you've got to be real careful with your software and hardware, because if there's a system cracker, he can hurt you by crashing all of your data. With a hard-disk system, though, you do get a great deal more storage space."

An important issue for most sysops is, once the system is up, how do you let people know about it? "It's fairly critical, when a new board starts up, that you advertise it to people that you think might be interested, and try to push it a little, make it interesting, and keep up the enthusiasm. After a while, it tends to advertise itself."

BBS for business?

Mark Richard Cusumano, a successful young entrepreneur, recently began his own BBS in connection with his company. Electronic communications is his specialty.

"My bulletin board was started because of the interest I had with electronic communications," says Cusumano. "I had called a few other bulletin boards and was fascinated by them. A very good friend of mine runs and sells a bulletin board package which I bought, and have been running my board with ever since."

The package Cusumano bought is called WWIBBS (Wetware Interface BBS). The cost of his system is $3000, including computer, modem, and software.

"Anyone interested in starting their own bulletin board has a few things to decide on first. The major consideration is a phone line for the board. Once the board is up and running, the phone will be useless for anything else. Second is a computer. The computer you use will also be useless while the board is up. If you can't afford to dedicate a computer for the board, then you have to find consistent hours when you will have the board up. If your hours aren't consistent, you will have people calling you at various times of the day asking you when it will be up, and eventually people will just stop calling."

To Cusumano, 90 percent of the "aggravation" in running a BBS is software problems. Once you have the software, you have to fine-tune it to your own tastes. "I *strongly* suggest this be done before the board goes up. Users don't take well to being testers, as it's their dime making the phone call. Lastly, have patience and don't give up.

"Once your board is up and running, it is time to enjoy its benefits. Get-together parties have been started by at least *two* of the boards I know of, so that users can meet each other face-to-face. You will also find that you will learn a great many things from people that you normally would miss. Your users become a vast encyclopedia of knowledge on subjects you may know nothing about."

Cusumano notes that he uses his board as part of his business, so it has become second-nature to him. "Since the computer is in my office and I tend to work late at night, it gives me a source of diversion so I can clear my mind when it gets tied in knots. Also, the board is a source of communication between my clients and myself."

If being a sysop is so rewarding, why isn't everyone doing it? Cusumano says, "Well . . . it is a lot of work. For every 100 nice users you have, there is always one person who is trying to cause trouble. I've had a few of these, and those that I've found out about, I've talked to and have no problems with them anymore."

To anyone thinking of starting a board, Cusumano has only one thing to say: "You're either going to love it or hate it, there's no in-between."

VF-80

The sysop of Valley Forge-80 (VF-80), located just outside Philadelphia and one of the city's sturdiest and most reliable boards, is Kurt Wesley. VF-80, like WWIBBS and Bucks Telematics, runs on TBBS software, and was one of the first to utilize that BBS program in the Philadelphia area.

"I believe I started the board about two and a half years ago," Wesley says, "with Connection-80 software on a TRS-80 Model I, then used a Model III, then last June I switched to TBBS, which is the current VF-80, on a Model IV. I started it as a hobby and a challenge; in those days, there weren't too many BBSes around. It grew and grew, and today it's pretty popular, I think. While the board is up, there is only about an hour or so a day when it's free from callers."

Wesley says "sysoping" takes quite a bit of time and a lot of work. "It takes me about two hours a day to maintain the system, in addition to answering questions which people leave. Also, there is the registration of new people, who have to be authorized and given the right access levels; too, there is what we call the 'squeezing' of messages. That's the deletion of obsolete messages to make room for new messages. There's the maintenance of the download section, with new programs that people upload to you. This is in addition to cleaning up messages that people leave that are perhaps not fit for public consumption."

Wesley adds, "If you want to be a sysop, to begin with, you need the hardware and the software, which is pretty easy to get. A computer with enough disk space; a good piece of software (since there's always people trying to crash your system); of course, an auto-answer modem (generally 300-1200 baud); a separate telephone line, preferably one that does not ring in your house; and a printer. In addition to all that, you just need time and patience."

Broad mix of personalities

I have attempted to present a broad mix of personalities and backgrounds to provide the reader with a strong cross-section of viewpoints, despite the similarity of my questions.

And while it's obviously unnecessary to be a landed aristocrat in order to run one's own board, having enough money to run a board is the Number 1 consideration. Many interested readers will already own a computer and most likely a modem as well. As long as the modem has auto-answer capabilities, the future sysop is close to having a complete system.

Software is likewise an important point in question, and the availability and quality of such depend on the host computer brand; for instance, there are many more software packages sold for TRS-80s, Apples and IBM PCs than for Commodores, Ataris, some IBM PC compatibles and others.

However, from the responses I have presented here, to run a BBS is a rewarding and noble thing. I should know—I am a co-sysop on VF-80, and run the famous Eyeball Cafe. See you there!

BACK ISSUES!

Copies of the first issue of Entry are still available for $2.00 plus $1.00 postage and handling. Honestly, there is an extremely limited supply, so order these collector items now!

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ENTRY HERE

We are always open for submissions. Entry Magazine is the forum for telecomputing, and we pay for reviews of bulletin board systems, reviews of software and hardware, and general features. Write to us and we'll be glad to give you our guidelines.

Exploring public domain software

by Alisa L. Lowden

An extraordinary wealth of high-caliber computer programs awaits every user, stored deep within the recesses of computer bulletin boards and also in CompuServe's Special Interest Group bases.

While the commercial software you see neatly stacked in computer stores certainly has the edge on packaging, it frequently bears an outrageous price-tag. Users who don't have the money to invest $400 in a word processing program, $250 on a telecommunications package, or $50 on a single game should be advised of the great amount of good programs they can download at absolutely no cost.

This multitude exists in varying quantity for virtually every popular system, regardless of the base in which the software is stashed. Most BBS sysops take pride in making as many different programs available, for all computers, that they have storage space for. All are donated by the users themselves, who have gotten them in turn from other bases or from friends, usually in exchange for other public domain programs which they do not already have.

It must be emphasized that the exchange of public domain software is NOT piracy. Quite the opposite: Programs available in public bases do not have violable copyrights, although the developers of such are usually granted acknowledgment somewhere within the program. They are purposely made available to each and every computer user who wants them, and can also be obtained at computer user's groups meetings. A much wider horizon, however, is open to the modem owner whose terminal software supports uploading and downloading.

Uploading programs

The term "upload" refers to the act of transferring a file FROM your computer TO another system. You can upload programs to friends or to large databases. The specifics of uploading depend on the system and software involved, at both ends; for instance, sending a file to the Source is quite different from sending a file to VF-80 (a TRS-80 system), which is different from sending a file to Harmer's Hut (an IBM PC system), which is different from uploading to Video Fantasies (an Apple-based board) and so on.

There are, however, some similarities which must be observed in every case, in order to correctly send all bits of information through the phone lines. The commonly accepted protocol for uploading and downloading is embodied in a program called XMODEM, which is itself available in many public bases. Also known as the Ward Christiansen protocol, XMODEM is a standard for use in file transfer. However, there are some other commercial and public terminal programs which allow the user to upload and download also, with little or no noticeable difference in integrity.

This is a major factor in up- and downloading, for if line noise from the telephone gets mixed up in the program as it is being transferred, strange characters will occur within the file and it will not run correctly. The risk of this is minimized when both sender and receiver are using the same terminal protocol, and XMODEM is preferred on CompuServe and most BBSes.

Downloading programs

To "download" a program is to take it from another computer's base and put it into your own files, on disk or sometimes tape. By turning on your modem's buffer, you can absorb as many programs as will fit. (Full details on downloading can be found in your telecommunication software's manual.) Public domain bases on BBSes can usually be found either in the main menu or in your particular computer brand's sub-board. Many of the programs you will find are sent in listed BASIC form, so you can simply activate your download, save the chosen program onto disk, then just run it after you log off to see how it works.

Others, however, are in sequential-file form, and have to be translated back into basic before you can run them. This can be done with a utility program called "tx2bas," which can be found under various names in many bases. Some files that you can download are in text form, and are usually information on a specific program also in that download section, or may be simply of notes of general interest, or a funny story someone felt obligated to share.

Almost every good system has fairly detailed "help" sections on-line for confused users, or for anyone who wants more specific information on downloading and uploading files in that particular area. Also, most sysops will be quite glad to either chat right there and answer your questions, or will respond to the needy in Email if they are not present and you leave them a message. Sysops must be notified when you upload files to their systems, since they must go into the BBS and modify the menu so it includes your donation, and also must examine what you sent. They appreciate it if you send along a separate text info-file on your program as well, although this is not always necessary.

Many are utilities

A great many of the programs available are utilities of one kind or another, written by and for the programmer. Disk routines, language tricks and other aids and shortcuts are there for the asking, for almost every popular language and for nearly every machine.

Conversely, there are programs for the most timid, ignorant brand-new computer owner who wants to find out more about his or her machine without spending the first-born child in a software store; with the public programs, you are free to experiment and learn, to pick and choose, without feeling the burned disappointment that comes after your realize you've wasted money on a terrible commercial package. There are games, communications programs, various utilities, business software, educational programs, one-of-a-kind unusual pieces, and so much more.

Bulletin Boards

We've included a listing of most of the bulletin boards known as of press time. Please keep in mind, however, that bulletin boards come on- and off-line all the time, and while we do our best to maintain accuracy, we appreciate your help.

Sysops: Please let us know whether your bulletin board is still active by sending a postcard, signed, with your name and number, to Entry Magazine, P.O. Box 1876, Media, PA 19063. We welcome additions or changes to this list. We'll be happy to read your comments or suggestions.

To those coming on-line for the first time: Welcome! The following bulletin boards are only a phone call away, and most boards are free. Ma Bell (or Pa AT&T) will love you, take our word for it.

Alabama

FORUM-80 Montgomery (205) 272-5069
RCP/M RBBS Huntsville (205) 895-6749

Arkansas

PMS Ft. Smith Comp. Club, Ft. Smith (501) 646-0197
CONNECTION-80 Little Rock (501) 372-0576

California

BBS B.R. Los Angeles (213) 394-5950
AMIS+R TABBS, California (213) 366-2125
AMIS WVAUG, California (213) 783-8373
Computer Connection (213) 657-1799
Datamate Canoga Park, (213) 998-7992
Dragons Game System (213) 428-5206
Electric Line Connection, Sherman Oaks (213) 789-9512
Kluge Computer, (213) 947-8128
L.A. Interchange, Los Angeles (213) 631-3186
Long Beach Community Computer, (213) 591-7239
Oracle, North Hollywood (213) 980-5643
ABBS Computer Conspiracy, Santa Monica (213) 829-1140
Conference-Tree #4, Santa Monica (213) 394-1505
Conference-Tree, Kelp Bed, Los Angeles (213) 372-4800
Dial-Your-Match #1, (213) 842-3322
Dial-Your-Match #2, (213) 783-2305
Dial-Your-Match #9, (213) 345-1047
Dial-Your-Match #7, (213) 840-8252
Dial-Your-Match #11, (213) 242-1882
Dial-Your-Match #25, (213) 842-9452
Dial-Your-Match #28, (213) 764-8000
Dial-Your-Match #36, (213) 452-6111
ABBS, Pacific Palisades, Los Angeles (213) 459-6400
Greene Machine, Fricaseed Chicen, Arcadia (213) 445-3591
All Night, BBS, (213) 564-7636
Novation Co., Los Angeles (213)881-6880
Green Machine, Los Alamitos (213) 431-1443
Greene Machine, Temple City (213) 287-1363
NET-WORKS Coin Games, Los Angeles (213) 336-5535
NET-WORKS Computer World, Los Angeles (213) 859-0894
+NET-WORKS Magnetic Fantasies, Los Angeles (213) 388-5198
NET-WORKS Softworx, Los Angeles (213) 473-2754
+PASBBS, Torrance (213) 516-7089
PMS, Los Angeles (213) 334-7614
PMS O.A.C., Woodland Hills (213) 346-1849
RCP/M CBBS, Pasadena (213) 799-1632
RCP/M RBBS, BBS Valley (213) 360-5053
RCP/M RBBS, Palos Verdes (213) 541-2503
RCP/M RBBS, Software Store, Los Angeles (213) 296-5927
P. Bay BBS, San Francisco, CA (415) 775-2384
PMS Portola Valley, CA (415) 851-3453
PMS, Pleasanton, CA (415) 527-8276
ARMU, Synapse (415) 527-8276
RBBS #2, California (415) 342-6793
ABBS PCNET, San Francisco (415) 863-4703
ABBS, South of Market, San Francisco, CA (415) 469-8111
ABBS, Hayward (415) 881-5662
On Line Department Store, (415) 334-7555
RCP/M BBS, Marin County (415) 383-0473
RCP/M RBBS, Larkspur (415) 461-7726
RCP/M RBBS, Mountain View (415) 965-4097
RBBS DataTech 006, San Francisco (415) 563-4953
CBBS, Lambda, Berkeley (415) 658-2919
Sunrise Omega-80, Oakland (415) 452-0350
CONNECTION-80, Fremont (415) 651-4147
CONFERENCE-TREE #3, Hayward (415) 538-3580
Dial-Your-Match-10 (415) 467-2588
CBBS Proxima, Berkeley (415) 357-1130
RCP/M RBBS Datatech 001, San Carlos (415) 595-0541
Kinky Komputer, San Francisco (415) 552-8268
System/80, San Leandro (415) 895-0699

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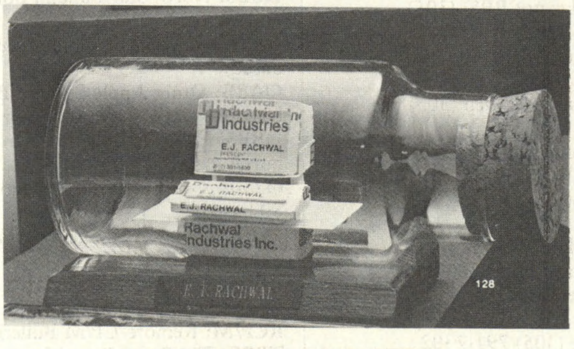

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RCP/M RBBS GFRN Data Exchange, Garden Grove (714) 534-1547
KERNCOM, Bakersfield (805) 833-0359
Remote Northstar, Santa Barbara (805) 682-7876
Remote Northstar, Santa Barbara (805) 964-4115
RCP/M CBBS CP/M Net, Simi Valley (805) 527-9321
Pacific Conference Tree, Oxnard (805) 985-2591
TBBS, Sacramento (916) 971-1395

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TARI (303) 221-1779
AMIS Denver (303) 758-6233
ABBS Denver (303) 759-2625
Pinecliff RMPM, Pine Cliff (303) 642-3034
BBS IBM PC, Denver (303) 773-2699
CONNECTION-80, Denver (303) 690-4566
Forum-80 #2, Denver (303) 343-8401
+HBBS, Denver (303) 343-8401
RCP/M RBBS Arvada Elec., Colorado Springs (303) 634-1158

Connecticut

Telecom 7, New Fairfield (203) 746-5763
BULLET-80, Seymour (203) 888-7952
BULLET-80, Danbury (203) 744-4644

Florida

INFOEX-80, West Palm Beach (305) 683-6044
BBS, Homestead (305) 246-1111
YBBS The Health Bar (305) 940-8795
Micro-80, West Palm Beach (305) 686-3695
BBS The Notebook, West Palm Beach (305) 686-4862
MOUSE-NET, Orlando (305) 277-0473
Personal Msg. System 80, Deerfield Beach (305) 427-6300
ABBS Byte Shop, Ft. Lauderdale (305) 486-2983
The Byte Shop (Networks, not BBS) (305) 261-3639
ABBS Byte Shop, Ft. Lauderdale (305) 486-2983
CONNECTION-80, Winter Garden (305) 894-1886
FORUM-80, Ft. Lauderdale (305) 772-4444
ASGCOM, Orlando (305) 894-7886
Chalkboard BBS, Hollywood (305) 926-6052
Color Burst, Ft. Lauderdale (305) 525-1192
Greene Machine Spacecoast (305) 268-8356
+Greene Machine Spacecoast (305) 453-6561
Heathkit, Ft. Lauderdale (305) 791-7302
Lynx 1 BBS, Ft. Lauderdale (305) 791-7302
Lynx 2 BBS, Pembroke Pines (305) 432-5969
ORACLE, Deerfield Beach (305) 475-9062
PMS-80, Deerfield Beach (305) 427-6300
SOFTWARE CONNECTION (305) 484-7547
TBBS, Winter Park (305) 644-8327
TRADE 80, Pompano Beach (305) 426-8080
TBBS, Orlando (305) 644-8327
The Port, Tampa (813) 961-8483
Bradley Computer BBS (813) 734-7103
BSBB Tampa (813) 885-6187
Micro Informer (813) 884-1506
Connection-80, Tampa (813) 977-0989
COCOBBS, Sarasota (813) 924-2626
CBM-U Commodore, Largo (813) 391-5219
Alpha, Tampa (813) 969-0512
Tampa Bay Bandit Board (813) 937-3608
Tampa Bay TIBBS (813) 525-7998
OMEGA, Tampa (813) 257-2705
Net-Works Beach BBS, Miami (904) 932-8271
The Cave BBS, Gainesville (904) 372-9712
Dial-Your-Match #30 (904) 795-8850

Types of Bulletin Board Systems

(With special thanks to P.C.M.S., Wheaton, IL)

AABS: An Award Bulletin Board System (based on Apples, TRS-80s, Franklins or Osborne computers) with "tailor-made" software and tons of creativity.
ABBS: Apple Bulletin Board System (Apple-based).
AMIS: Atari Message Information System (Atari-based)
CARN: C.A.R.N.I.V.A.L. Bulletin Board (Atari-based)
CBBS: Computerized Bulletin Board System (S-100 based)
CCBS: Commodore Computer Bulletin System (C-64 based)
COCO: Color Computer Bulletin Board (TRS-80 based)
CONF: Conference Tree System (Apple-based)
DADS: Greene Machine Message System (TRS-80 based)
DYM: Dial-Your-Match (Apple or C-64 based, usually)
FORE: F.O.R.E.M. Message System (Atari-based)
GBBS: Apple-based Bulletin Board System
HP-1: Hewlett-Packard Bulletin Board
MAGS: Message and Games System (TRS-80 based)
MCMS: Micro Computer Message System (TRS-80 based)
MODE: ModeMedium Message Sytem (Apple-based)
NBBS: North Star Bulletin Board (North-Star-based)
NET: Net-Works Communications (Apple-based)
OABB: Other Apple Bulletin Board (Apple-based)
OBBS: Osborne Bulletin Board System (Osborne-based)
OTBB: Other TRS-80 Bulletin Board (TRS-80 based)
PMS: People's Message System (Apple-based)
RBBS: Remote Bulletin Board System (often PC- and compatibles-based)
RCP/M: Remote CP/M Bulletin Board
TBBS: The Bread Board System (TRS-80 based)
TIBB: Texas Instruments Bulletin Board (TI-99/4A based)
TPBB: Trading Post Bulletin Board System (TRS-80 based)
TRAD: Trade-80 Bulletin Board System (TRS-80 based)
VIC: VIC Bulletin Board System (VIC-20 based)

Georgia

BBS-IBM Hostcomm, Atlanta (404) 252-4146
TIBBS, Atlanta (404) 425-5254
Athens IBM-PC Users, (404) 546-0583
ABBS #X, Atlanta (404) 256-1549
ABBS AGS, Atlanta (404) 733-3461
ABBS Bailey's Computer Store, Augusta (404) 790-8614
BBS IBM PC, Atlanta (404) 294-6879
BBS IBM PC, Atlanta (404) 252-9438
BULLET-80, Fayetteville (404) 461-9686
CBBS, Atlanta (404) 636-6130

Illinois

The Word Exchange, Springfield (217) 753-4309
NET-WORKS C.A.M.S., Decatur (217) 429-5541
BULLET-80, Springfield (217) 529-1113
NET-WORKS MAGIE, Galesburg (309) 342-7178
University Conference Information Net, Chicago (312) 942-0089
The Valley Girl, Chicago (312) 747-4247
The Windy City BBS, Chicago (312) 238-0063
Larry's Electric Company, (312) 221-0171
M.A.G.S., Chicago (312) 598-5955
Khasablanca, (312) 971-1736
Cloudy City I, (312) 438-2968
ABBS Code, Glen Ellyn (312) 537-7063
ABBS Rogers Park, Chicago (312) 973-2227
AMIS, Chicago (312) 789-3610
BBS IBM, Chicago (312) 259-8086
CBBS, Chicago (312) 545-8086
MCMS C.A.M.S., Chicago (312) 927-1020
Marine Drive BBS, Chicago (312) 248-7479
MCMS L.A.M.S., Round Lake (312) 740-9128
Wizard's Room, Chicago (312) 420-7745
NESSY, Chicago (312) 773-3308
PET BBS Commodore, Chicago (312) 397-0871
Chicago Green Machine (312) 622-4442
OCCCS #2, Wheaton (312) 588-7917
PMS: Chicago Public Library (312) 235-3200
Dial-Your-Match #39 (312) 243-1046
ABBS Gamesmaster, Chicago (312) 475-4884
ABBS Illini Microcomputer, Naperville (312) 420-7995
MCMS P.C.M.S., Wheaton (312) 260-0640
NET+, Wheaton (312) 260-0748
NET, Chicago (312) 267-2065
HCOM, Chicago (312) 267-2066
NET, Chicago (312) 278-7261
MCMS, Hanover Park (312) 289-7619
CP/M, Chicago (312) 326-4392
CP/M, Chicago (312) 338-8827
CNODE, LaGrange Park (312) 352-5681
PCM, Arlington Heights (312) 392-2403
NET, Arlington Heights (312) 392-2403
PCM, Midlothian (312) 396-1022
Hotel California, (312) 751-8178
CBBS, Palatine (312) 397-0360
HP1, Palatine (312) 397-8308
NET+, Arlington Heights (312) 398-0970
TBBS, Chicago (312) 445-4545
MCMS, Wheaton (312) 462-7560
CP/M, Glen Ellyn (312) 469-2597
NET+, Chicago (312) 528-1611
OT, Elk Grove (312) 529-1673
CP/M, Chicago (312) 537-7888
AMIS, Bellwood (3120 544-7228
NET+, Chicago (312) 545-5866
MAGS, Hickory Hills (312) 598-4861
AMIS, Lombard (312) 620-6441

NET, Lombard (312) 627-5138
NET+, Chicago (312) 644-5165
ONL, Chicago (312) 648-4867
ABBS, Lincolnwood (312) 674-6502
NET, Stokie (312) 674-9246
NET, Chicago (312) 685-9573
ABBS, Chicago (312) 743-3153
OT, Oak Park (312) 795-0871
TIBB, Oak Park (312) 848-3669
CBBS, Dolton (312) 849-1132
CP/M, Downers Grove (312) 852-1305
CP/M, Chicago (312) 861-1797
CBBS, Chicago (312) 876-0974
MCMS Metro West Database, Chicago (312) 260-0640
MCMS Waco Hotline, Schaumburg (312) 351-4374
NET-WORKS Chipmunk, Hinsdale (312) 323-3741
NET-WORKS North Parks, Chicago (312)

Indiana

PMS, Indianapolis (317) 787-5486
AVC Computer Center, Indianapolis (317) 898-5027
LFD Enterprises, Indianapolis (317) 875-7773
NECC (CP/M), Indianapolis (317) 894-7514
PMS, Indianapolis (317) 787-5486
PMS Software Exchange, Indianapolis (317) 251-7796
RCA Amateur Radio Club, Indianapolis (317) 267-5043
RF Commtrole Systems, Indianapolis (317) 357-8597

Iowa

ABBS Apple-Med, Iowa City (319) 353-6528
IBM-PC, Cedar Rapids (319) 363-3314
NET-WORKS Computer Emporium, Des Moines (515) 279-8863

Kansas

FORUM-80, Wichita (316) 682-2113
RCP/M RBBS MUG, Mission (913) 362-9583

Kentucky

Kentucky-Indiana Personal Computer Users, (502) 896-4419

Louisiana

FORUM-80, Shreveport (318) 631-7107
STAR (LINC) BBS, Lafayette (318) 237-3350
NET-WORKS Crescent City, Baton Rouge (504) 454-6688
CBBS, Baton Rouge (504) 273-3116
Baton Rouge Data Systems, Baton Rouge (504) 926-0181
LNW BBS Southeast, Baton Rouge (504) 291-4331
ABBS, Baton Rouge (504) 291-1360

Maryland

Hex, Silver Spring (301) 593-7033
TARI, Severna Park (301) 544-2460
ABBS Computer Crossroads, Columbia (301) 730-0922
A-C-C-E-S-S, Annapolis (301) 730-0922
ARMUDIC Computer Age, Baltimore (301) 587-2132
BBS IBM, Beltsville (301) 937-4339
BBS IBM, Bethesda (301) 460-0538
BBS IBM, Gaithersburg (301) 251-6293
BBS IBM PC, Rockville (301) 949-8848
CBBS, Gaithersburg (301) 948-5717
CONNECTION-80, Gaithersburg (301) 840-8588
NETWORKS, Laurel (301) 953-3341; (301) 792-0305
PMS, Baltimore (301) 764-1995
PMS, Ellicott City (301) 465-3176
PMS, Pikesville (301) 653-3413
PSBBS, Baltimore (301) 994-0399
RCP/M RBBS, Bethesda (301) 229-3196
RCP/M RBBS, Laurel (301) 953-3753
Remote Northstar NASA, Greenbelt (301) 344-9156
Baltimore Com Connection, Baltimore (301) 366-3745

Massachusetts

RCP/M MCBBS Superbrain, Lexington (617) 862-0781
FORUM-80, Westford (617) 692-3973
Dial-Your-Match-18 (617) 334-6369
BULLET-80, Boston (617) 266-7789
CBBS, Boston (617) 646-3610
CBBS Lawrence General Hospital, Boston (617) 683-2119
CBBS Microstar, Worchester (617) 752-7284
Boston Info Exchange, Boston (617) 423-6985
New England Computer Society, Maynard (617) 897-0346
NET-WORKS Pirate's Harbor, Boston (617) 720-3600
PMS Apple Guild, Weymouth (617) 767-1303
PMS Computer City, Danvers (617) 774-7516
Atlantis Control BBS, Malden (617) 321-6809
Pirates Hideout, Sandwich (617) 863-1237

Michigan

BBS Metro, Detroit (313) 455-4227
TBBS The Waterford Computer Exchange (313) 623-1089
Davy Jones Locker (313) 764-1837
Treasure Island (313) 547-7903
Twilight Phone (313) 775-1649
Westside Download, Detroit (313) 533-0254
AMIS MACE (313) 274-3940
AMIS (313) 544-0885
ABBS, Detroit (313) 477-4471
ABBS Michigan Apple-Fone, Southfield (313) 357-1422
AMIS A.R.C.A.D.E, Sterling Heights (313) 978-8087
AMIS M.A.C.E., Detroit (313) 868-2064
BULLET-80, Waterford (313) 683-5076
COMNET-80, Mt. Clemens (313) 465-9531
Dial-Your-Match #37 (313) 736-1398
Apple-Gram (313) 852-8056
RCP/M, Detroit (313) 584-1044
RCP/M MCBBS, Dearborn (313) 846-6127
RCP/M RBBS, Pontiac (313) 338-8505
RCP/M RBBS, Southfield (313) 559-5326
RCP/M RBBS, Westland (313) 729-1905
RCP/M MCBBS, Royal Oak (313) 759-6569
CCCC BBS, Canton (313) 981-5061
CONNECTION-80, Lansing (517) 339-3367
AMIS G.R.A.S.S., Grand Rapids (616) 241-1971
CBM-UCommodore, Holland (616) 396-7106
ABBS Computer Room, Kalamazoo (616) 382-0101
CONNECTION-80 W.MI Micro Group, (616) 457-1840
Commodity Traders (616) 731-5330

Minnesota

PMS, Minneapolis (612) 929-6699
PMS Twin Cities, Minneapolis (612) 929-8966
CBBS, Richfield (612) 423-5016
Conference-Tree, Minneapolis (612) 854-9691
ABBS Calvary Mission Church (612) 471-0252
MCMS MC Software, Minneapolis (612) 533-1957
BBS, Richfield (612) 869-0054
ABBS Calvery Memory Church, (612) 472-3895
Captains Log Apple Networks (612) 377-7747
CBBS, Richfield (612) 423-5016
Commodities/ABBS Apple (612) 333-8970
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Goliath MCMS TRS (612) 753-3082
Heathkit Zenith (612) 778-1213
Job System, The Networks (612) 542-9597
Knights of the Round Table (612) 457-4139
LawSIG (612) 872-2352
Loci's Net+ (612) 571-5965
Mario's Hideout (612) 645-0826
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NC Software (612) 533-1957
Pirate Island, (612) 825-5852
Pirates Place (612) 781-9266
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Simple Simon (612) 432-0428
Twin City Atari Interest Group (612) 432-3779
Terminal Station (612) 423-5048
United RBBS, (612) 731-1063
Simple Simons RBBS, Apple Valley (612) 432-8403

Mississippi

Remote Apple, Jackson (601) 992-1918
Micro-Com CP/M, Jacksonville (601) 354-1239
BULLET-80, Hattiesburg (601) 264-2361

Missouri

ABBS Century Next Computers, St. Louis (314) 442-6502
AMIS ComputerCave (314) 432-7034
ABBS, St. Louis (314) 838-7784
NET-WORKS Computer Station, St. Louis (314) 432-7120
PET BBS, St. Louis (314) 625-4576
Midwest, St. Louis (314) 227-4312
KC Hack-Shack, Kansas City (816) 891-7753
FORUM-80, Kansas City (816) 861-7040
FORUM-80, Kansas City (816) 931-9316
NET-WORKS ABC, Kansas City (816) 483-2526
Howards Notebook, Belton (816) 331-5868

Montana

BBS IBM PC, Billings (406) 656-9624

Nebraska

ABBS, Omaha (402) 339-7809
TRADE-80, Omaha (402) 292-6184
Dial-Your-Match #23 (402) 571-8942

Nevada

SIGNON, Reno (702) 826-7234
SIGNON, Reno (702) 826-7277
FORUM-80, Las Vegas (702) 362-3609
PMS Century 23, Las Vegas (702) 878-9106
COMNET-80, Las Vegas (702) 870-9986

New Hampshire

CONNECTION-80, Peterborough (603) 924-7920
NET-WORKS, Portsmouth (603) 436-3461
Software Referral Service (603) 625-1919
Access 80 BBS (603) 434-6225
FORUM-80, Nashua (603) 882-5041

New Jersey

Central Jersey 99 Computer Club TIBBS, (201) 929-8161
Jersey Shore BBS, (609) 693-8849
AMIS Bayonne, (201) 339-7407

Continued on p.20

Headlong toward portability

by Dr. John V. Schmitz

In the book *The Third Wave*, author Alvin Toffler claimed that the U.S. is emerging from the Industrial Age and entering a new era in which all of us will enjoy almost complete freedom to live, work and recreate wherever and whenever we desire. Without doubt, we are achieving that prediction of four years ago.

Toffler wrote his book before portable computers had become widely available. Portables are playing a major role in turning his vision into reality, in company with other electronic marvels including video recorders, cellular telephones and robots.

It is now entirely possible for many of us to perform our work at home or on the road, almost as efficiently as at a central office. We can generate and collect information, communicate and store knowledge anywhere and at any time that we have access to an electrical umbilical cord and a telephone outlet. New generations of battery-operated portable computers and radio modems are eliminating even those restrictions.

The battle for supremacy in the computer market is becoming fully joined. When we introduced the subject of portable computers earlier this year, portables were being sold by small startup companies, like Compaq and Kaypro and Columbia and the now bankrupt Osborne. During the past few months, the majority of established marketers of personal computers have recognized that portable models are needed for their product lines and long-term growth. Big computer manufacturers are now rushing to introduce new portables. The focus of the battle is moving away from the early 20-35 lb. *transportable* computers to systems weighing less than 20 lbs., variously called *briefcase*, or *lightweight* models.

Lot of alternatives

As the data in the chart indicates, computer manufacturers are offering a lot of alternatives for your consideration. Some of the features may be important to you but others may not matter. Key factors are operating system (i.e., the software that the system can accommodate), capacity (random access memory), on-line storage and display. Users also want communications capability, printing capability, design elegance and ease of use.

Recognizing the success of the IBM PC, many of the new systems use the MS-DOS operating system, allowing access to the rapidly growing supply of IBM-compatible software. Others employ CP/M, which still has the largest library of software, and some combine two or more operating systems in the same machine to increase software options. The new lightweight portables have RAM capacities similar to desktop or transportable systems.

On-line storage differs among the systems. Some (Hyperion, STM PC, Apple IIc, Visual Commuter) use 5¼″ floppy disks. Others (Apple Macintosh, Gavilan) use 3½″ floppies and some (Sharp, GRiD Compass) employ bubble memory or battery-powered RAM (The Portable from Hewlett-Packard). Only the systems using 5¼″ floppies allow direct disk/disk exchange with desktop machines. Most of the other systems can handle this problem through interfacing with external disk drives.

Another distinct difference among competing brands is the way in which the system displays data. The lightest and most portable systems use liquid crystal displays (LCDs) that are also used in *lap* computers. These range from 8 rows by 80 columns to an impressive 25 x 80 in size, with excellent clarity. Others employ cathode ray tubes (CRTs) which are heavier than LCDs but provide much better graphics. Both the EL and CRT systems require relatively large inputs of electrical power, complicating use of batteries as power supplies.

Either as standard features or options, many of the systems include a built-in modem or provide an all-in-one computer center by incorporating a built-in printer. The most portable systems (Gavilan, Sharp, H-P) allow battery operation.

There is something for the user. Most of the systems include proprietary software that is designed to remove computerese and give comfort to the first-time user. This was also initiated in the Hyperion (with special help keys) and has been thoroughly pursued in the GRiD, Gavilan, Visual and, especially in the Apple products (which replace words with icons or symbolic pictures). User-friendly is giving way to the appliance computer which is intended to be nearly idiot-proof.

Reading tea leaves

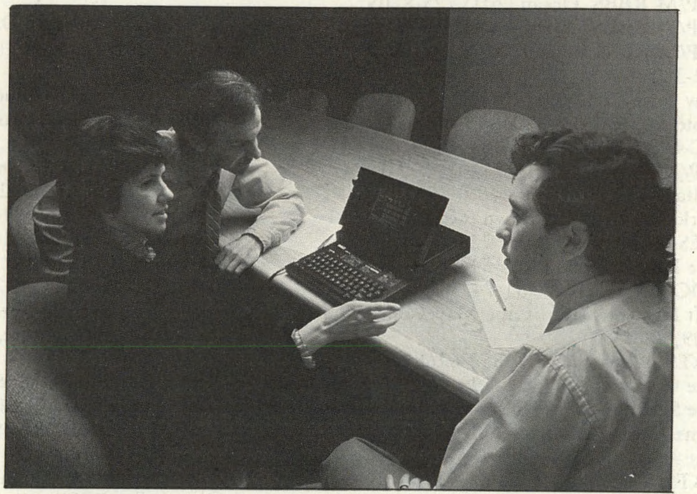
These, then, are our readings of the tea leaves and future of personal computers: They will be powerful, easy to use, increasingly compatible with large software libraries and attractive in appearance. Manufacturers will stress small size ("light, light" in weight and "thin, thin" in dimensions). Software will be more carefully designed for general use and probably will be supplied in safer and faster ROM chips (as in Hewlett-Packard's The Portable or in the *lap* computers described in last issue's column) or bubble memory cartridges (GRiD, Sharp) rather than on disk. Price competition will be severe.

The most glamorous application demonstrates the advantages of a combination of mobility and computing power. The space shuttle Columbia carried a GRiD Compass programmed to provide the astronauts with an independent method for visually tracking their progress through space, on the computer display, without help from Mission Control. Reports from NASA indicate the experiment, requiring extremely involved calculations, was a resounding success.

The Compass has also been used effectively by the Department of Defense in field training exercises and in military operations in Lebanon and Grenada.

Many other field operations can be improved through on-site computing. According to Karen Coberger of Gavilan Computer, their Mobile Computer is gaining popularity in project management on construction sites and in diversified miscellaneous applications including navigation of corporate jets and scanning and control of medical cardiac pacemakers. Hertz has purchased a large number of Passports for control of their vast fleet of rental automobiles.

Portable computers and telecommunications were made for each other. Business needs and portable computers walk hand in hand, and include consultation with corporate databases, often from distant locations, spreadsheet analyses, communication with commercial database services and routine preparation of memos and transmission of electronic mail.



If you want to learn more about portable computers, contact Dr. John V. Schmitz at Technology Help, Inc. (THINC), 3401 Science Center, Philadelphia, PA 19104. (215) 387-9036.

Lightweight (9-18 lbs.) portable computers

Manufacturer	Model	Price	Display (LineXcol.)	Memory STD (max.)	Storage	Bundled Software/ Firmware
Apple Computer Co. Cupertino, CA 95014 (408) 996-1010	Macintosh Apple IIc	$2,495 $1,295	9-in. CRT 24X80 LCD	RAM 128K ROM 64K	3½ in. Floppy (400K)	WP, SS, Graphics, Windows
Bytec Mgmt. Corp. Ottawa, Canada (613) 226-7013	Hyperion (Also A-J Passport)	$3,195	7-in. CRT	RAM 128K RAM 256K ROM 8K	5¼ in. Floppy 2 5¼ in. Floppies (655K)	ProDOS MS-DOS, BASIC
Gavilan Computer Campbell, CA 95008 (408) 379-8000	Mobile Computer	$3,995	16X80 LCD	RAM 64K (160K) ROM 48K	3½ in. Floppy (360K)	MS-DOS, SS, WP, MS-BASIC, Pascal, Comm.
GRiD Systems Mt. View, CA 94043 (800) 222-4743	Compass	$5,995	24X80 Electrolumin.	RAM 256K (512K) ROM 16K	Bubble (384K)	None
Hewlett-Packard Corvallis, OR (503) 757-2000	HP-110 The Portable	$2,995	16X80 LCD	RAM 272K ROM 384K	RAM (Main. by Battery Power)	MS-DOS, WP, Comm., LOTUS 1-2-3 (in ROM)
Sharp Electronics Paramus, NJ 07652 (201) 265-5600	PC 5000	$1,995	8X80 LCD	RAM 128K ROM 192K	Bubble Cart. (128K) or Dual Disk	MS-DOS, GW BASIC, WP, Comm.
STM Menlo Park, CA (415) 326-6226	STM PC	$3,500	25X80 LCD	RAM 256K (512K)	5¼ in. Floppy (800K)	MS-DOS, GW BASIC, SS, DBM, WP, Comm.
Visual Computer Marlboro, MA 01752 (617) 480-0000	Commuter	$2,450	16X80 LCD	RAM 128K (512K)	5¼ in. Floppy (360K)	MS-DOS, GW BASIC

Bulletin Board Systems

Cont. from p. 17

Communique, Livingston (201) 992-5660
Computel, Freehold (201) 462-1957
TBBS, Metuchen (201) 494-3649
ABBS CNNJ, Pompton Plains (201) 835-7228
Atari, Edison (201) 549-7591
ABBS, Livingston (201) 994-9620
AMIS, Park Ridge (201) 391-5519
Conference Three Flagship, Denville (201) 627-5151
Dial-Your-Match #14 (201) 272-3686
CFONJ/TBBS, Linden (201) 486-2956
Forum-80, Monmouth Brielle (201) 528-6623
PMS-Rutgers University Microlab, Piscataway (201) 932-3887
PMS, Shrewsbury (201) 747-6768
RATS Systems (201) 887-8874
RCP/M MCBBS, Flanders (201) 584-9227
RCP/M RBBS, Ocean (201) 775-8705
RCP/M RBBS (201) 747-7301
RCP/M RBBS Rutgers, New Brunswick (201) 932-3879
New Jersey Telecom (201) 635-0705
Photo-80, Haledon (201) 790-6795
A-C-C-E-S-S, Wyckoff (201) 891-7441
PCP/M RBBS, Cranford (202) 272-1874
Delta Conn, Princeton (609) 896-2436
Dark Tower, Bordentown (609) 298-3130
TIES, Turnersville (609) 228-1149
The Pits, Absecon (609) 646-1633
COCO Rats, (609) 451-7475
Soft Horizons BBS, Cape May Court House (609) 886-6929
RATS, Wenonah (609) 853-8268
The Gandalf BBS (609) 799-4643
The Swashbuckler, Paulsboro (609) 423-4865
Time Lord, Woodbury (609) 848-4698
The Antfarm BBS (609) 465-8653
RATS, Wenonah (609) 468-5293
ABBS, Turnersville (609) 228-1149
The Tardis BBS (609) 448-1367
The Rats Nest BBS (609) 261-5498
Greene Machine, Vorhees (609) 429-4542

New Mexico

BULLET-80, Alamogordo (505) 434-1096

New York

ABBS, Queens (212) 896-0519
The Database BBS (212) 772-7167
Bronx BBS (212) 933-9459
COMM-80, Queens (212) 897-3392
Nybbles-80 (212) 626-0375
SISTER, Staten Island (212) 442-3874
CONNECTION-80, (212) 991-1664
CONNECTION-80 (212) 441-3755
AMIS (212) 241-8965
AMIS Info (212) 767-6633
AMIS (212) 568-0682
NET-WORKS (212) 410-0949
PMS McGraw Hill Books (212) 997-2488
TCBBS B.A.M.S. (212) 362-1040
TCBBS Leigh's Computer World (212) 879-7698
BULLET-80 (212) 740-5680
TCBBS Astrocom (212) 799-4649
ABBS Apple Mate (201) 864-5345
BBS IBM PC (201) 678-6670
NET-WORKS Pirate's Trek (516) 627-9048
CONNECTION-80, Centereach (516) 588-5836
CONNECTION-80, Great Neck (516) 482-8491
LNW BBS, Long Island (516) 924-9229
ABBS Pirates Cove, Long Island (516) 698-4008
Adventure BBS (516) 621-9296
CBBS LICA LIMBS (516) 561-6590
CBBS (516) 334-3134
Capitol City BBS, Albany (518) 346-3596
RCP/M SJBBS, Johnson City (607) 797-6416
RCP/M RBBS, Rochester (716) 223-1100
NET/WORKS (914) 725-4060
NET/WORKS Pirates Lodge (914) 634-1268
OSUNA, Scarsdale (914) 725-4060
Nybbles-80, Elmsford (914) 592-5385
RCP/M RBBS, Woodstock (914) 679-8734
RCP/M SJBBS, Bearsville (914) 679-6559
ST80-PBB, Monroe (914) 782-7605
RCP/M RBBS, Brewster (914) 279-5693

North Carolina

ABBS, Charlotte (704) 364-5252
Cleveland County YBBS, Kings Mountain (704) 482-8012
Micro Comm III, Raleigh (919) 876-2866
AMIS, Fayetteville (919) 323-3934
Dial-Your-Match #20 (919) 362-0676

North Dakota

Country Micro, Minot (701) 839-0390

Ohio

ABBS Akron Digital Group, Akron (216) 745-7855
BULLET-80, Chesterland (216) 729-2769
COMNET-80, Akron (216) 645-0827
TBBS, Akron (216) 724-2125
PMS RAUG, Akron (216) 867-7463
Forum-80, Cleveland (216) 486-4176
PMS, Massillon (216) 832-8392
ABBS ABACUS II, Toledo (419) 865-1594
ABBS Computer Store, Toledo (419) 531-3845
XBBS, Hamilton (513) 863-7681
NET-WORKS, Dayton (513) 671-2753
RCP/M BBS-Mini RBBS (513) 435-5201
BULLET-80, Ironton (614) 532-6920
Applecrackers, Columbus (614) 475-9791
Ohio Valley BBS (614) 423-4422
RCP/M CBBS, Columbus (614) 272-2227

Oklahoma

AMIS (405) 681-6929
AMIS (405) 685-2027
ARMU (405) 722-5056

Oregon

CONNECTION-80 PAUG, Portland (503) 281-7653
FORUM-80, Medford (503) 281-7653
OARCS, Portland (503) 641-2798
Atari Computer Enthusiasts (503) 343-4352
Microtext (503) 754-1376
CBBS NW, Portland (503) 646-5510
PMS Computer Solutions, Eugene (503) 689-2655
PMS, Portland (503) 245-2536
RCP/M (503) 621-3193

Pennsylvania

Dunjon-80, (215) 885-0636
Valley Forge-80, (215) 783-0291
DruCom-80, (215) 855-3809
Hermes-84, (215) 434-3998
Bucks Telematics, (215) 752-8996
Philly Med-Comm, (215) 928-1038
MagiComp, (215) 473-2360
Grand Prix-80, (215) 25-MODEM
WWIBBS, (215) 885-3232
CoCo Connection, (215) 857-3035
BBBS, (215) 275-7141
Search, (215) 659-3562
Unicorn-4, (215) 821-4924
Video Ace, (215) 446-7670
Video Fantasies, (215) 363-0563
Royal Court, (215) 462-8993
Apple Pirates, (215) 824-3569
Apple Cider, (215) 357-5120
Apple Utopia, (215) 462-8993
Pirate Ship, (215) 357-5120
Pat-Net, (215) 296-8259
Boot Hill, (215) 436-8311
Apple ?, (215) 742-8900
Communitree, (215) 951-2977
Citadel, (215) 638-1176
Hacker's Hill, (215) 664-6417
Secret Service II, (215) 855-7913
Valley Forge RIBBS (215) 293-9487
Wizard's Court, (215) 386-9596
RCP/M RIBBS, (215) 398-3937
Cheltenham RBBS, (215) 836-5116
Tari-board, (215) 432-5686
Philadelphia TIBBS, (215) 927-6432
?, (215) 947-0896
Villanova RIBBS, (215) 337-3414
System Two RBBS-PC, (215) 631-9155
Harmer's Hut, (215) 565-7639
Crossfire 84 (215) 576-5009
Quasar (215) 379-2053
I.C.E. (215) 439-5696
Carnival, (215) 250-9471
DVCS Bullet/80, (215) 331-0341
Exocet-80, (215) 821-4924
Downingtown TBBS, (215) 269-5199
DRX-64, (215) 878-8262
JR's, (215) 333-3753
Microboard (215) 338-6005
Microline, (215) 868-1230
Port Royal MultiUser, (215) 563-9213
? (215) 734-2106
? (215) 722-1973
Garden Works, (215) 276-5177
Nameless BBS (215) 836-2273
WIBBS, (215) 885-3232
Galaxy One, (215) 244-0864
Heath Users, (215) 644-7661
CBBS PACC, Pittsburgh (412) 822-7176
ARMU (412) 655-2652
DBBS, Derry (412) 694-5750
CAPATUG, New Cumberland (717) 774-6543
BULLET-80, Clarks Summit (717) 586-2112
TRADE-80, Erie (814) 898-2952
RCP/M CUG-NODE, PA State College (814) 238-4857
Phantom Access (814) 868-1884

Rhode Island

NET-WORKS, Providence (401) 331-8450
AMIS, Rhode Island (401) 521-1998

South Carolina

RCP/M RBBS, Fort Mill (803) 548-0900
FORUM-80, Charleston (803) 552-1612
CompuSystems, Columbia (803) 771-0922

Tennessee

Knight-Line, Nashville (615) 297-6037
ABBS Computer Lab, Memphis (901) 761-4743

Texas

BBS-80 DALTRUG, Dallas (214) 235-8784
AMIS, Dallas (214) 680-9018
ABBS The Moon, Dallas (214) 931-3437
BULLET-80, Hawkins (214) 769-3036
RCP/M CBBS, Dallas (214) 913-8274
ABBS Dallas Info Board (214) 248-4539
ABBS Teledunjon I, Dallas (214) 530-0858
ABBS Teledunjon, Dallas (214) 960-7654

Washington

ARBB, Seattle (206) 546-6239
ICTS, Redmond (206) 883-0403
AMIS Space Washington (206) 883-0403
Mail Board-82, Seattle (206) 527-0897
Mini-Bin, Seattle (206) 762-5141
MSC-80, Everett (206) 334-7394
Seacomm-80, Seattle (206) 763-8879

LOGON

There's no place like CompuServe's HOMe

(and a trip to the good doctor's bulletin board)

by Gary Dilllio

Welcome back! Glad you could join us for our second trip to CompuServe.

Last issue Cookie, my trusty Yorky-Poo, whose credit card magically allows me to take these trips, and I introduced Entry readers to CompuServe. We logged on, signed up, hunkered down and covered the top level menus of this extremely popular information service you can access with your telephone, computer, modem and appropriate telecommunications software.

This issue we'll explore some of the exciting features of the HOMe Services Section.

A prime advantage of an on-line information system such as CompuServe is its dynamic nature. News, weather, sports and other information can be changed very quickly within bulletin board systems (BBSes) and information systems. The reader should be aware when reading articles about telecommunication services that material may not be up to date when it is published.

Since my last article, for example, CompuServe has added yet another entry in its top level menus. Titled "The Electronic Mall," this series of menus takes computerists through an on-line shopping spree.

More than 60 stores are represented in the Mall including such favorites as Sears, Waldenbooks, Kodak, Record World and Bank of America. As you travel the mall, you can press the letter "O" for any item you wish to purchase. The items are "collected" in your shopping basket until you exit the service. When you exit the mall, CompuServe displays an order form annotated with your purchases and a list of costs. If you approve the order, your credit card is charged and your order is processed for shipping. Alternative payment methods are also supported. (Cookie was slightly disappointed that the mall contained no pet shops, but there is little or no market for electronic mail-order beef chewies.)

Logon and Entry Magazine will keep you abreast of major changes in CompuServe and the major BBSes. Now . . . on to CompuServe.

Helpful 'GO' command

After entering our user-ID and password (Cookie's is LOVE=MEATBALLS) type GO HOM-1. In a moment CompuServe will present the Home Services menu. Remember that this is a second level menu. The top menu, covered last month, routed us to one of six secondary menus. This menu routes us to a third level where most of the real action takes place.

In particularly complex areas, fourth and fifth level menus exist. It's easy to spend time and money just getting to where you want to go. When you are more familiar with the system, you would be wise to make frequent use of the GO command.

The GO command will save you time and money. Let's deviate for a moment to demonstrate its significance. I am a frequent user of a special segment within CompuServe called the TRS-80 professional SIG (special interest group). At initial sign-on, using the menus, I have to travel through the following menus to get to the SIG:

1. Top Level Menu .... (CIS-1)
2. Personal Computing Menu .... (PCS-1)
3. Groups and Clubs Menu 1 .... (PCS-50)
4. Groups and Clubs Menu 2 .... (PCS-51)
5. TRS-80 PRO SIG .... (PCS-21)

Routing through the above menus takes about two minutes and costs 20 cents. By simply typing GO PCS-21 at the initial prompt, it is possible to bypass the top four menus, saving at least a minute. Since most visits to CompuServe involve multiple actions in multiple areas, minutes can ad up to dollars.

When you find a particular area in CompuServe that you wish to re-enter at another time, jot down its GO number and use GO as much as possible.

Cookie reminds me that we're still signed-on to the HOMe Menu of CompuServe and all this lecturing on GO is costing $$$, so let's begin to explore some of the nooks and crannies of the Home Services Area. From the menu, type a "1" (for News/Weather/Sports) or type GO HOM-10.

The News/Weather/Sports menu has 7 choices. You can read, on-line, either the *Washington Post* or the *St. Louis Post-Dispatch*. Reading an entire newspaper on-line would be rather expensive but most of the interesting stories are menu selectable. If you are particularly interested in a specific topic, some of these research tools allow you to key in a word or two for data search. Cookie always uses this section to make sure Purina hasn't yet gone out of business. The quiet rumble of her stomach when she receives this happy news is more than worth the connect time charges. The ($) symbol after the *Washington Post* appears in many menus and it cannot be overlooked. Services marked with a ($) are *surcharge* services. Using a surcharge service obligates you not only to pay CompuServe its fee but also some fee to, in this case, the *Washington Post*. Reading the *Washington Post* on-line can be very expensive. (Cookie suggests you stick with the *St. Louis Post-Dispatch* to save money and leave the *Washington Post* to Congressmen who are smart enough to find a way to charge the fee to you and me taxpayers.)

Menu-driven news sources

Choice 3 on this menu, the AP Videotex Wire, is another menu-driven news source. This source allows us common folks to receive fast-breaking stories almost as soon as the newscasters see them. There is some silly satisfaction knowing what the lead story will be on the 11 p.m. news at 10 p.m. The AP wire is one of Cookie's favorite CompuServe services. She gets all of the news on the AP wire without the clack, clack, clack of a newswire.

Want to know who the leading money winners on the PGA tour are or when and where the next PGA event will take place? Select the Official PGA Tour Guide from the HOM-10 menu. Ski conditions and discounts are available by selecting item 7 on this menu. Item 4 on the HOM-10 menu, NOAA Weather, allows the user access to weather forecasts for any one of the 50 states.

(Please remember that even the age of electronic communication can't make these forecasts any more correct than if you waited for the evening news to broadcast the weather. The advantage of CompuServe is not that the forecast is more accurate but that it is easier and quicker to access.)

Item 5 on this menu allows you to access another surcharge service called the "Hollywood Hotline." Here you can check out the latest Hollywood gossip. This electronic Rona Barrett allows you to get answers to such burning questions as "Who's married to Liz Taylor these days?"; "Has Lassie really left Rin Tin Tin for Morris the Cat?"; and so on.

Reference menus

Let's leave this menu and select the second choice from the Home Services section. One way to get to the Reference section is to press ENTER or RETURN at the HOM-10 menu. When the HOM-1 menu is displayed, press "2." A better way to get to the reference menu from HOM-10 is to type "GO HOM-20."

The reference menu has 13 choices, ranging from the Academic American Encyclopedia to Sex and Wine. Now we're getting to my favorite subject—encylcopedias. The choices on this menu are self-explanatory. Simply select your are of interest and press its selection number.

The Communications menu (HOM-30) allows the subscriber to send electronic mail to other CompuServe subscribers as well as participate in one of the CB channels. (CB Simulation will be covered in an article of its own at a later date.) Also included in this menu is the CompuServe BBS and Ask Aunt Nettie. The BBS is similar to other BBSes and has its own set of commands. (Discussion of those commands will have to be saved for a future article.)

By the way, Ask Aunt Nettie is CompuServe's answer to Dear Abbey. I have never understood the usefulness of this type of column in newspapers because the problems addressed often require answers that are timely. I have often suspected that, by the time Abbey solves your problem, the problem has either gone away or has been solved by an alternative method. Aunt Nettie, being an on-line service, however, should offer questioners a reply timely enough to do some good.

Shopping Services can be found in the HOM-40 menu. These services are straightforward and require little explanation. The Electronic Banking selection (2) allows subscribe to bank by computer. This allows users a banking diversity unavailable until now.

The Discussion Forum (HOM-50), the Game Section (GAM-1), the Education Menu (HOM-70) and the Travel selections (HOM-90) offer the user a group of selections in their area of special interests. The Discussion Menu contains both instructions for access (selection 19) and a description of each of the selections (selection 20). Download and print these instructions and descriptions if you intend to access this section often. By referring to these printouts while on-line, you can save money by going directly to your area of interest with the GO command.

(Cookie points out that playing games [GAM-1] on-line tends to be expensive. It is very easy to become engrossed in solving an adventure and forget about the time, which can be costly.)

The Home Management Section (HOM-80) allows you to balance your checkbook and perform other home finance functions on-line. The Electronic Gourmet (a surcharge service) provides help with recipes and food-preparation information.

Finally, the Entertainment Section (HOM-31) offers movie reviews, Hollywood gossip, video information and the opportunity to purchase video, audio and electronic products.

These home services contain a great deal of good advice and information and afford users the opportunity to purchase products and do banking on-line. After we have covered each of the second-level sections, we will return to the Home Services menu and explore some of its fascinating subjects. Next month's article will explore some of the Business and Financial Section menus.

Next . . . on to Penndel, Pennsylvania, for our next appointment.

Bucks Telematics

Last month we began our review of local BBSes with System 2, located in Norristown, Pennsylvania. This month we'll be looking at the Bucks Telematics BBS and its system operator (sysop), Dr. Richard Press.

Bucks Telematics (in Bucks County, PA) is a TBBS system run on a Radio Shack Model I. In my opinion, the TBBS software is the best BBS software available for the Tandy line of computers. Since TBBS constantly strobes your terminal for input, it is possible to interrupt any menu presentation with your selection choice. This can save a great deal of connect time.

Some of the vital statistics of Bucks Telematics are:

Location: Penndel, PA
Baud Rate: 300 or 1200
Phone Number: (215) 752-8996
Protocol: 7 bit/even parity or 8 bit/no parity
Stop Bits: 1
Password: User-selectable
Operating Hours: 24 hours/7 days
System Type: TRS-80 Model I
BBS Type: TBBS (The BreadBoard System)

Although the Telematics board offers little downloading facilities at this time, its message bases are useful and unique. Downloading was a feature available in the past but the untimely death of one of the disk drives precluded offering the service for some months.

Bucks Telematics, a service of Primary Medical Associates, is run primarily by Dr. Richard Press. Dr. Press practices family medicine in Penndel, Pennsylvania, and includes computers, stereo, photography, model railroading and calligraphy as his hobbies.

His lifelong ambition, Dr. Press says, is to "somehow make his wife understand his obsession with computers."

Bucks Telematics has been operating since December, 1983. Dr. Press established the board as a forum for other doctors to discuss cases. "It was also a great way to share my hobby," he says. The Doctor's board is restricted to medical personnel, medical students and those in allied health fields.

According to Dr. Press, the board has proved to be entertaining and educational. One of the board's members posts symptoms as clues in a Zork-type game, the goal of which is to properly diagnose an illness. Other doctors can "order" tests on the fictional patient and receive results.

Dr. Press noted that the activity on the Doctor-Patient board was, at first, surprising to him. Some callers use the message system as a "second opinion" to their own doctor's diagnosis. Other callers have asked questions ranging from ulcer medications to cardiac care.

You may remember that Cookie has set up a rating system based on the content, quality and ease of use of each service. The ratings aer on a 1 to 5 bone system with one bone being marginal and five bones signifying excellence. (These Yorkies can be pretty tough raters and you may not agree with Cookie's rating of *your* favorite board, but we'll make every effort possible to rate each board fairly.)

TERMINAL CONFIGURATION PARAMETERS:

* Line feed alteration, video width adjustment, page length adjustment and all other terminal parameters can be altered by the use of the Utility Menu (U). Passwords can also be changed within this area. TBBS offers great flexibility in configuring terminal settings. Menu verbosity can be specified within the Utility area.

RATING . . . 4 bones

MESSAGE SYSTEM PARAMETERS: (Menu command in parenthesis)

* Leaving a message (L)

* Scan messages (S)

* Read message (R)

* Read messages Forward (F); Backward (B); Selective (S); New (N); Individual (I); Thread (T)

Probably the finest message-reading options are (S)elective, (N)ew and (T)hread. Read Selective allows the caller to specify/search for a specific subject, message sender, or message receiver, greatly reducing time spent viewing messages that do not interest the caller. Since TBBS remembers your last message read from a previous call, Read New offers viewing only those messages that have been posted since your last call. Read Thread is, perhaps, the most useful of the Read commands. The Threat option allows the caller to follow the "thread" of a specific subject. Since BBS systems contain messages on a variety of subjects, it is often possible to forget the content of a previous message while viewing that message's answer. Read Thread allows the user to follow a conversation to its latest message without viewing unrelated messages.

RATING . . . 5 bones

MISCELLANEOUS FUNCTIONS: (Menu command in parenthesis)

* Read system bulletins (B)

* Send/Receive EMAIL (M)

RATING . . . 3 bones

FILE DOWNLOAD/UPLOAD FUNCTIONS: (Recently added)

RATING . . . 2 bones

Additional features

Bucks Telematics offers Special Interest Group (SIG) boards on a variety of subjects. There are two boards that restrict membership: The (D)octors-only board and a board for members of the Delaware Valley Computer Society. Public access boards include:

(P)hysician/Patient Dialog
(G)eneral Discussion
(R)eal Estate Topics
(C)omputer-related Topics

The Computer board is further subdivided into 7 sub-message boards. Titles of these boards are: COMMODORE, APPLE, C-LANGUAGE, CP/M INTEREST, ATARI, TRS-80 and IBM-PC.

The Physician/Patient board offers a unique local service to BBSers. Frankly, before accessing this board, I expected the messages to go something like this:

JB: I seem to be losing my hair. Help!
DOCTOR: Take two aspirins and call me in the morning.

HBY: What can I do for severe abdominal pain?
DOCTOR: Take two aspirins and call me in the morning.

FRED: When I use a driver, I slice the golf ball to the left.
DOCTOR: Tighten up on your grip, take two aspirins and call me in the morning.

Obviously I was wrong. The dialog is very interesting, informative and useful. Two of the subjects covered by the board lately have included "using contact lenses" and "dealing with premature baldness."

TELEMATICS OVERALL BONE RATING . . . 4 bones

Bucks Telematics is a very good message board. It's friendly, and has interesting messages for a variety of computers. Next time you are BBSing, try the Telematics board. It's easy to use and provides interesting and useful information.

Well, it's time to turn off the modem and end another trip. Next time, in addition to accessing another area of CompuServe we'll be looking at a very different style of BBS with some "adult" areas found in a bulletin board called DRUCOM-80.

CORRECTION

In the May-June issue of Entry Magazine, *the Program Store* announced a new pricing policy offering "the best for less." However, the starting date for the policy was incorrectly set as March 21. The actual starting date is *April 8.* We're sorry for any inconvenience this may have caused our customers.

—The Program Store

Out of time and space

by Edmund N. Ricchezza

CHATTER on Delphi

Most bulletin boards allow users to "chat" on-line with the system operator (sysop). The large information services such as CompuServe and the Source have something *like* chatting, whether through CB-simulation channels or "chat" features. But few provide so much ease of use for chat (a CHATTER Bulletin Board) as Delphi does.

You haven't heard of Delphi? I think you should. Here's a quote from Alfred Glossbrenner's definitive book, PERSONAL COMPUTERS COMMUNICATION (Everything You Need To Go Online With The World) from St. Martin's Press:

Although it will be some time before it rivals the other information utilities in membership or features, one firm that definitely rates up-and-coming status is General Videotex Corporation of Cambridge, MA. The firm's Delphi System already offers an on-line encyclopedia and on-line banking service and more features are planned for the future. Many of the "other features" are already on-line. And I can support what I say because I've been a member since early this year. Actually, I'm a Delphi junkie—I just can't get enough out of this marvelous system.

I'll tell you why.

First, I'll quote some figures furnished by Glenn McIntyre, manager of product development at General Videotext Corp. From April 1 to October 31, 1983, subscribers nearly topped 1043. Small yes, but growing surely, steadily. In the six month period to April 30, this number climbed to 2452, a 75% increase! (Glenn anticipates this figure to top 3000 in July this year.)

Of course, I'm not exclusive when choosing what information services to use during the month. I use CompuServe and the Source, but not as often as I used to. I am addicted to electronic mail (Email), and I use Delphi's Email service more often.

An important feature at Delphi for many people is that they don't give you long, cumbersome IDs to remember. As a subscriber, you have a "membername"—mine's Monte Cristo. Now, isn't that nice!

Yes, like Delphi, Source has a CHAT feature—but with Source, only *two* persons can cary on a conversation. Compuserve has the CB type arrangement where many subscribers can join in at the same time, on the same "channel." To tell you the truth, some people go absolutely bananas over one type and shun the other. Personally, I prefer Email because I don't like to be under pressure to share my thoughts instantly. I like to take my time and prepare my text off-line, so I can marshall my thoughts, edit to suit, etc. Delphi provides this service, and it is extremely easy to use!

But you have your preferences and I have mine. I enjoy Delphi because it is practically self-instructing. User-friendly takes on real meaning with their menu system—superb! Other information services prepare you with a manual, which can be at times difficult to use, for a beginner.

Also, many other people find the Email sections of other services hard to use, and many won't allow you to send letters to multiple suscribers. This is not the case with Delphi, which permits multiple addresses—excellent!

You know, probably the finest feature (to me anyway) about Delphi is the informality and closeness of association I've had through the system with Delphi's chief management, the "bigwigs." For an example: Over a long holiday weekend which extended into Monday and which was not followed nationwide, I had occasion to phone Delphi. After I concluded my business I gave my membername and was I ever surprised! I got this response: "Hi! This is Wes."

(Wes happens to be #1 at Delphi. Can you imagine this happening at the Source or CompuServe?)

Email, Bulletin Boards

Neither space (nor my meager finances) permit a completely comprehensive review of all the databases and features Delphi offers. I have a limited monthly telephone budget, and believe me, you know how expensive on-line time is these days. This review will highlight only the Mail and Bulletin Board sections.

I am completely taken up by Email. It is fascinating! It is a great pleasure to send and receive electronic mail. I have quite a number of correspondents scattered across the country, diversified as to age, sex, culture and the like. Here's a brief mention and small description of those with whom I correspond and, in some cases, the nature of our correspondence—and incidents associated with it:

1. Charles and Jo Kellner (San Rafael, CA). Membernames: Dragon and Fianna. Both are computer experts. While both are knowledgeable about both software and hardware, Charlie is the software expert and Jo is the hardware expert.

2. David Howard Baharian (Boston, MA). Membername: Howard. One morning I received the following in my electronic Mail Box:

Good morning! I don't know where you are but have a good day.

Of course I responded and in the developing correspondence Howard mentioned that he had a visual impairment. After I asked him, "To what degree?" he surprised me. "100%. I have been blind since birth."

Howard told me he uses an Echo speech synthesizer, which creates a voice electronically. I did some research and found out more about Echo, with help from Richard Moberg, a founder and past president of the Philadelphia Area Computer Society (PACS). Richard had done a considerable amount of work with the blind. I got in touch with him and he furnished me with all sorts of information. He suggested I call Eric Clegg, a friend of Richard's, also blind. I called Eric, and he gave me further information. When I told him about Howard, Eric replied that he had gone to school with Howard in Boston. A small world!

3. Bruce and Li Holloway (Dover, NH). Membernames: Albatross and Penguin. Bruce is a programmer.

As a result of a bet which they won because of a contest on CHATTER Bulletin Board (more on CHATTER later), the Holloways made a weekend trip to Washington, D.C. to collect their bet—a bottle of choice Frascati donated by Chris DeFransisci. On their return trip, Bruce and Li took the time to make a stop over in Philadelphia to visit us.

And many, many others, all of which I know almost personally, since I chat with them extensively.

Bulletin Boards

As of this writing (May 1, 1984) these are the Delphi bulletin boards (BBSes) in active use: APPLE, ATARI, BB's, BOOKS, CHATTER, COMPUTERS, CP/M, DECUS, DELPHI, DIGITAL, GAMES, HAM RADIO, HOT SUMMER SUN, IBM-PC, JOKES, MARINE RESEARCH, MISCELLANY, MOVIES, NEW IDEAS IN WORLD AFFAIRS, ORACLE, PERFORMING ARTISTS NETWORK, PERSONALS, PRINTERS, MODEMS, RACING, RECIPES, SOFTWARE, SPACE RESEARCH, SPORTS, TEXAS INSTRUMENTS, TRAVEL, TRIVIA, TRS-80, USER ADVISORY PANEL, and VIC-COMMODORE.

As I explained before, I am limited to a budget and will limit my attempts to trying to set up the VIC-COMMODORE BBS and "playing games" on the CHATTER BBS.

(The "playing games" is my own designation because, while not a game per se, to me it represents a form of amusement which I enjoy as much as some folks enjoy computer games, CHAT, CB-type chatter, or whatever.)

CHATTER BBS involves any subscriber submitting anything within the bounds of propriety. While adult patter is common, it is by no means pornographic.

Contributions are varied in context. Some will be a 1) a humorous personal experience; 2) a play on a current topic of national or local interest, a burlesque on an item of history, literature, art; 3) a poem (and many of these are truly remarkable and indicative of native, inborn talent); occasionally some will make a POST about an innocent topic and another will pick it up with a reply, to which a third person will furnish a contribution.

For example, one contributor posted:

To Aunt Em: I hate Kansas. I am taking the dog and leaving. Will write. (Signed) Dorothy.

To which a self-claiming wit posted a comment deploring Dorthy's decision to move. He was in tears, sad that he'd enjoyed the checker games he and Dorothy had played behind the hen house lo these years. And how much he had enjoyed the new game of pattycake which Dorothy had taught him.

Sending Email

An advantage of Delphi is that subscribers can send Email from Delphi to the other hosts. Here's how it works:

DELPHI PROMPT
MAIL>
TO:
SUBJECT:
USER RESPONDS
SEND
SOURCE or COMPUSERVE
WHATEVER
(please type your message below)

TCX000 or 12345,678. The ID must be on a line by itself.

(your message—followed by Delphi protocol for sending)

Messages are sent approximately at 5:00 a.m. the following morning for a surcharge of 75 cents. For Delphi to Source, this is a big money-saver, considering Source's charge (non-prime) of $7.75/hr vs Delphi's charge of $6/hr plus a .075 charge.

The regular subscription fee for Delphi lifetime membership is $49.95. Because of the possible demise of the Philadelphia Area Computer Society's newsletter, THE DATA BUS (which I read faithfully and could not do without), I communicated with Delphi to determine if they would agree to a special consideration for PACS, provided a group membership would be available. Delphi agreed—but you have to be a PACS member to join. Through PACS, a lifetime subscription is $29.95 with a $10 usage credit applying. (PACS membership is $15 per year. Phone PACS at (215) 951-1255 for more information.)

Logging on

For the technically minded user, Delphi uses VAX 11/750 systems, using Decnet for machine-to-machine communications. The service uses a Kms11 intelligent network processor and PSI software for X.25 interface to Tymnet. It also uses RA81 456 MB Winchester disk drives and RA80 BPI tape drive, VMS 3.5 operating system with FORTRAN, BASIC, and Datatrieve Development software. (Delphi's language is primarily written in FORTRAN).

Log-on is through Tymnet. The carrier tone is followed by this message:

please type your terminal identifier
upon which the user enters "A" (no <RETURN>)

DELPHI PROMPTS
Please log in
remote call connected
USER RESPONDS
DELPHI

ENTER MEMBERNAME

(WHATEVER)

ENTER PASSWORD

(WHATEVER)
(password will not be shown on your monitor)

And away you go!

Rates are $6/hour non-prime. Here are *two* big advantages: Prime time does not begin until 8:00 a.m. And there is no additional charge for 1200 baud service.

Look, I'm out of time and space. See you on the system!

Copyrights and kosher OR Fighting software pirates with a full stomach

by Gerry J. Elman

What have the courts done to fight software piracy? What legislation exists at this time? And what exactly does a copyright on software mean?

Gerry Elman, who practices high technology law in Philadelphia, tackles some of these major questions. A substantial excerpt from this article appears as the chapter "Fighting Software Pirates" in the book **Digital Deli** *published in July, 1984 by Workman Publishing. (Copyright © 1984 by Gerry J. Elman. All rights reserved.)*

These days I think everyone looks at food labels more carefully. Yesterday I was reading a box of chicken parts when I saw something strange. It was similar to a copyright symbol, but a little different.

A copyright symbol, you know, is the letter "C" inside a circle, like this: ©. But on this box, the symbol was twisted a quarter turn sideways and its curve was flattened into Ⓤ.

At first I started to laugh, thinking I had caught the chicken company in a big mistake. But Sam the counter man set me straight. You see, it wasn't supposed to be a copyright symbol at all. Instead, it meant that the food is kosher—made only from ingredients that are permitted by traditional Jewish law. The symbol looks like the letter "U" inside the letter "O" and means the food has been okayed by the Kosher Certification Service of the Union of Orthodox Jewish Congregations of America.

So why was I thinking about copyrights in the corner deli? Well, I've been writing a program for the IBM PC and had been worrying that, as soon as I sold a few copies of it, the pirates would start their disk drives up and the pirates would be making the money, instead of me. I figured that once one of them go hold of my program on a diskette, it could be copied as many times as they wanted, and I'd have a real problem stopping them.

When I looked into the possibilities for protecting my precious programs from piracy, I discovered that I had several choices, including physical techniques along with a few legal strategies as well.

Keeping copies

The physical techniques include the simple idea of keeping all the copies of the program to myself. I could run it on my computer and sell just the results. That is, with a program designed to calculate results from data that other people supply—such as how much tax they owe based on their income and various deductions—I could have them send me their input, do the calculations on my own computer, and send them back the output.

To keep me from having to type in a lot of data, I could connect my computer to the telephone with a modem. Then the computer would be able to receive the data, process it automatically, and either send the results by phone or produce a printout I could mail back. Yet once I allow remote access to my computer, there's the possibility that someone really determined could figure out how to make the computer give out a copy of my special program—and that would let the cat out of the bag. But the big problem is that most microcomputer programs, such as word processors, spreadsheets and games, aren't really well suited to remote processing. People want programs they can run on their own machines.

Another way to protect my program would be to sell it in a form that isn't easy to copy. Instead of a disk or a tape cassette, I could incorporate my program into a read-only memory (ROM) chip that plugs into someone's computer—like a video game cartridge. But that technique would mean I'd have to use expensive equipment to make copies of my programs, and I'd be limited to selling programs for only computers that use plug-in cartridges. And even then it wouldn't absolutely prevent someone from reading out the instructions and copying them. It's just that they would have to use that same expensive equipment to do it.

Anyway, I want to sell the program on diskettes, but there are still a few tricks left for me to try. I could include instructions in my program that keep the user from copying it from one disk onto another. Many publishers of business programs use this technique, which is known as copy protection. But it infuriates many potential customers. They legitimately want to be able to copy the program onto a RAM disk (a block of random access memory that "pretends" it's a disk drive) or onto a Winchester hard disk. They also want to be able to create a backup disk in case something happens to the original.

Furthermore, as software publishers apply ever more sophisticated techniques for copy protection, an "arms race" develops. Certain hackers see each new system as a but another mountain to conquer "because it's there."

Some entrepreneurs have seen a need for new methods for securing programs while still allowing legitimate users to make copies. So many software publishers have expressed a need for techniques of this kind that an industry organization, the Association of Data Processing Service Organizations (ADAPSO) has set up a clearninghouse at its office in Arlington, Virginia, to keep track of them.

Recipients voluntarily pay

One creative solution to the difficulty of limiting the distribution of unauthorized copies is to encourage users to make and give their friends as many copies as they want. What the author does is include in the program a request that recipients voluntarily pay if they are pleased with the program. This is not unlike public television stations soliciting contributions from their viewers. The downside, however, is that a public TV station may get money from little more than 10 percent of its audience, and from most of those who do contribute, not even very much money at that.

Many publishers of business software try to minimize to the effect of software piracy by continually enhancing and updating the software and its documentation. At the same time they limit its distribution to the people who have legitimately bought an earlier version. Often they keep track of authorized copies of the software by marking each one with a serial number and making sure the user provides this number before getting the current update.

Each of these anti-piracy schemes has its own loopholes and drawbacks. As a writer and publisher of software, what else can I do to protect my investment of time and labor? How can I ensure that the people who benefit from my creation will end up paying me for it? What are those legal strategies for protecting programs that I mentioned earlier?

Since long before anyone created a computer, there have been three different kinds of legal strategies for protecting the results of someone's intellectual effort from being stolen by others. Copyright is one. The government's grant of a patent is another. And keeping it a trade secret is the third.

The exclusive right

Thinking back to the Ⓤ on the chicken label, the Jewish law of kashruth (which defines what is kosher) starts with certain provisions in the Books of Leviticus and Deuteronomy. Then it goes on to interpret them in time-honored ways. Similarly, the law of copyrights and of patents starts with a passage from the United States Constitution. It says that "The Congress shall have Power . . . To Promote the Progress of Science and useful Arts, by securing for limited times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries . . . "

Congress and the courts have sorted out two fields of law from this one Constitutional provision. Copyrights apply to the "writings" of "authors," while patents apply to "discoveries" by "inventors." It used to be easy to tell authoring from inventing. But these days, when I create a new computer program, am I an author or an inventor? The answer—maybe either, possibly both.

Since we speak of "writing" a computer program in a programming "language," it's easy to argue that copyright law should apply to software. But it isn't that simple. In Australia, for example, a computer program isn't copyrightable at all.

A copyright gives legal protection for an author's original form of expression, but it does not cover any process, system or method of operation. What does that mean for computer software in the United States? If there are several ways of saying the same thing, or of writing a program to accomplish a very particular result, a copyright will protect my unique expression of that general thing. However, I can't get a copyright that would allow me to monopolize every way of saying or doing that thing.

Part II: Decisions against piracy next issue

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TANDYLINES

TRSes and BBSes: Only natural

by Gary Dilllio

No doubt about it—among many of the popular bulletin boards in this country, a lot are run on TRS-80 computers.

Discovering which BBS systems will be useful to TRS-80 owners, however, can be a costly and frustrating business. The ratio of busy signals to connects often approaches 10 to 1. Finding out that, after a lot of effort, a particular board has little to offer the TRS-80 owner adds to the frustration. Which boards are useful? Which are a waste of time?

Over the past several months I have called many boards driven by TRS-80 equipment whose content is not particularly useful to the Tandy line of computers. Conversely, some of the boards driven by and for other computers have some useful information for TRS-80s as well.

Stimulus/Response

Stimulus/Response is our question and answer area. Please send your Q&As to the address listed in this column. We may not always know the answers, but I am sure some reader out there will be able to help. Since this is our first column, we selected a couple of questions recently posed to us at various computer meetings of the group I belong to, the TRS-80 Users Group of Delaware County, Pennsylvania.

Q: I downloaded a help file from one of the information services to my communications program buffer and then saved the buffer to a file. I then tried to load the file into my word processor and got an "OUT OF MEMORY" error. Isn't there any way I can edit this file? I would really like to use my word processor to edit this monster file.

A: I've posed the question above as close to the way I remember it being asked. Since the question came up in a conversation, I was able to prompt the questioner for more information. If you submit a question, PLEASE be as specific as possible. Answers are only as good as the information submitted. *What* word processor? *What* computer model? Was the "file" a tape or disk file? How big was the file? In this case, the question was posed by a Model I user. The disk file was 40,000 characters in length and the word processor was Lazywriter.

The solution to this problem is easy, given the computer and the word processor: 1. Load the file into Lazywriter again. Don't worry about the "OUT OF MEMORY" prompt. Lazywriter will load as much of the file as is possible (about 30,000 characters).

2. After loading is complete, SAVE the document in memory as PART 1.

3. From EDIT mode, go to the end of the document by pressing the ENTER key twice and examine the text. Look for some text that you will be able to recognize again.

4. Now clear the memory (CLEAR E) and, instead of loading the file again, use the list command (L). The disk file will be displayed one screen at a time, pausing until a key is pressed.

5. Keep listing the file until you recognize the text from the end of the saved document. Instead of pressing any key for the next screen, press the load key (1). The remainder of the file will load into memory and can then be saved as PART 2.

You can either keep each part separate or edit the file so that PART 2 can be appended onto PART 1 later.

Q: I am looking for an in-memory sort routine for my Model 4. TRS-DOS 6.0 doesn't seem to have one. When I had my Model III, a number of DOSes had such a routine.

A: Although TRS-DOS 6.0 is a great deal beter than other TRS-DOS versions, the SORT command was omitted. LSI, the LDOS authors, wrote TRS-DOS 6.0 for Radio Shack and may have a package of enhancements coming soon. Micro Systems Software, the makers of DOSPLUS, have an enhancement package for TRS-DOS 6.0 that is remarkable. The CMD"O" sort is multi-faceted and the other enhancements are worth their weight in . . . micro chips. Rather than buy the $50.00 enhancement package, I spent $130.00 to purchase their DOSPLUS 4 operating system. It includes all the enhancements. Every product I've purchased from MSS (including the remarkable MTERM) has been worth more than the purchase price.

About Tandylines

Future Tandylines columns will address issues and information relating to Radio Shack computers, especially as they are used to telecommunicate more effectively. Most of our items will relate primarily to the more popular models in the Tandy line: Models I, III, 4, 4P, 100 and the Color Computer. (However, we will try, when space permits, to support the remainder of the Tandy line as well.)

What will Tandylines be covering in future issues? Whatever you want to address! Tandylines is *your* column. Its success depends on your questions, tips, contributions, comments . . . and concerns. Its usefulness and relevance depends on you. If you will, Tandylines is a TRS-80 users group in a continuing series of magazine articles on downloading utility programs, examining TBBS software commands, etc.

Contributions or submissions to Tandylines should be mailed to:

Tandylines
c/o Gary Dilllio
1109 Madison Ave.
Prospect Park, PA 19076

We request that submissions longer than a page be submitted by diskette in standard Model I, III, 4, 4P or COCO format. All diskettes will be promptly returned if you include return address information. Modem users may call (215) 583-8307 (voice) to set up a time for electronic submission of material.

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Our clients include many small and medium-size firms in the Delaware Valley, in addition to some larger organizations such as the Du Pont Company, Bank of Delaware, Pepsi, and the State of Delaware.

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This list illustrates the programs we have written and the areas in which we have experience.

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Caller response

Bulletin Board Systems

The Matchmaker of Clark, NJ

Dial-Your-Match of Clark
(201) 381-7538

Located in the Township of Clark, NJ, Dial-Your-Match is run on a TRS-80 Model III computer with four drives. The system is set up using a Novation J-cat modem. This allows the system to accept 110-300 baud.

This dial-your-mode system has several boards, including the usual open board, and a few higher access boards. These boards can only be used by registered users. The higher access boards include ADULT, COUPLES, and a BI-GAY board.

Once the user becomes registered (there are instructions for this), he or she can pick the board of his or her choice and leave messages in which people of the same category could read.

If you prefer leaving a private message, just use the Email section. This allows the writing of private messages to anyone who is a registered user.

The question is, Who to leave Email to? This is easily answered by the LOVEMATCH function. Just by touching the letter "L" from the main menu, the computer begins the matching up. This gives you the name, the percent match and the last date of which that particular person had called. You can leave mail in an attempt to meet new people.

While a user cal leave Email to everyone, he or she may decide to play one of two on-line games. They are two adventures—one takes place in a jungle, the other is an adult feature for those who want a little more excitement.

The on-line games are challenging and a user has only 30 minutes on the system. How to earn more time to complete the game? The answer is simple: Use the UPLOAD/DOWNLOAD section. The download feature uses L-term and five other standard protocols for the TRS-80.

A user may be able to find the perfect gift, or item in the TOYS, ETC. section. This can be accessed by the adult users for the reason that it contains items for the adult. (However, there is no indication of where the items are purchased from.)

Finally escaping from the adults private sections and into the open access features, the user finds a complete listing of local and national bulletin boards, a list of all the users and the date of their last call. Another handy feature that needs no big introduction is the INFORMATION file, for new users.

If a user runs into problems, there is the chat feature. Jamie Kobre, the sysop and owner of the system, answered 100 percent of the time. (A very good score for a sysop.)

—Larry Gold

Systems and Software

Your Apple and your TermExec

TermExec communications package turns your Apple IIe or Apple II+ into an intelligent Apple terminal.

TermExec starts up immediately with most Apple configurations (it can detect Apple slots with possible modems) and allows you to log in to most hosts with no preparation.

For purposes such as manipulating files on your local diskette, commands are easier to use than menus. TermExec commands are patterned after Apple DOS, but are friendlier, with abbreviations and prompting if you forget an argument.

TermExec supports Christensen XMODEM protocol to eliminate errors in file transmission, operates up to 1200 baud, and supports the Apple IIe 80-column, even at 1200 baud. It also includes auto answer and dial up access.

Same day technical support exists on Exec Software's HOTLINE: (617) 862-3170. They also maintain a 300 baud bulletin board at (617) 863-0282 as an on-line newsletter for their users.

TermExec costs $79.95, and later, upgraded versions will be available to TermExec owners for $19.95.

Contact Exec Software, 201 Waltham St., Lexington, MA 02173.

About that modem you just bought . . .

Available only to members of the Source, Microsearch™ provides information on just about anything for your personal computer—compatibility, product availability, current prices, in addition to reviews and evaluations of hardware, software, accessories and service.

Microsearch™ consists of three major services—product literature; capsule summaries of hardware and software reviews, and general articles relating to IBM-PC products; and a directory listing the names and addresses of nearly 3,000 manufacturers whose products are referenced in the database.

Contact Source Telecomputing Corp., 1616 Anderson Rd., McLean, VA 22102.

Dial and listen modem card

SSM Modemcard

Now you can get your computer to dial touch-tone like a regular phone and even listen to the phone line at the same time. The SSM Modem Card is a fine modem card with features such as touch-tone dialing, built-in 2K terminal program, remote terminal mode and Hayes MMII compatible entry points.

The modem card also has "audio." So you can listen to dial tones, rings or busy signals when a number is dialed. This is very helpful for placing calls from your computer. The audio monitor shuts off by itself when a "carrier" is received. The card fits totally inside the Apple and accepts a standard modular telephone jack. You can use the SSM Modem Card and get started without the need for telecommunications software.

The card is easy to install. Plug the card in any slot 1-7, plug in your phone line, turn the power on, type IN#2 (MODEM SLOT) and you are all set to go ON-LINE.

Built-in terminal program

The SSM Modem Card has a built-in terminal program which you can use to auto-answer, set full or half duplex, set baud rates of 110 or 300, place a call (originate), go into a remote terminal mode and of course hang up the phone.

There are commands that turn sound on and off, touch-tone or pulse dial, line feeds, voice calling, enter and exit terminal mode and reset. The reset command (control-Y) has the effect of pressing the reset button but does not disconnect the phone line.

However, I discovered that the reset command drops you off into the APPLE MONITOR* and you have to type 9D84G to restore DOS.

(For instance, when the remote operator is running a basic program from your computer, the control-C will not stop a running program. Use the control-Y instead.)

The remote mode can be selected in two ways—one is from a command at your keyboard and the other is from a command received from the other computer operator. You would type control-A control-X or the other computer operator types control-R. Then either side types PR#2 (MODEM SLOT) and switches to full duplex. At that point the other computer operator can use your computer, catalog your disk and run programs "remotely."

Some vitals:

Hardware:	SSM Modem Card 110/300 baud modem for the Apple II, II+ and IIe
Model:	AMC300
Type:	Plug-in, direct connect modem card
Requirements:	One Apple slot 1-7 Modular phone jack
Company:	SSM Microcomputer Products 2190 Paragon Dr. San Jose, CA 95131
Phone:	(408) 946-7400
300 baud BBS:	(408) 946-3616
Documentation:	User's manual, booklet Brief, easy to follow
Price:	$295.00, suggested list

The SSM Modem Card can be used with a large variety of commercial telecommunications software.

—Dave Barkovitch

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- Capture data onto your disk from a HOST time sharing system.
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OVERSIGHT

Somebody *is* watching you!

Ask any telecriminal—back in their "good old days" free of the law, "hackers" could crack any MCI or Sprint access code and merrily post it for their friends to follow. To them, that was being real cool, now.

Not to mention real foolish.

Up until a few months ago, telecriminals could break into computer systems of every sort, "fix" records, thwart traces—until a few months ago, of course.

It's not so easy anymore.

Federal, state and local authorities are banding together, in light of the danger these hackers pose, to stop them. While this is a Good Thing, I think in some ways they maybe going too far.

Take, for example, the experiences of the late Del-Ches bulletin board system, run by Peter Rucci, after someone illegally acquired an account password and posted it on his board. The phone company wanted to stop the phreak, and Rucci had to give up the board because of the same types of people, leaving numbers and access codes to university computers, MCI and Sprint access numbers, etc. on his board.

You hear cases of these regularly: A California board operated by the sysop Tom Tcimpidis was literally *confiscated* by police—computer, modem and all, because of illegal credit card and Sprint access code postings. It wasn't *his* fault—some phreaker just uncaringly left them there, and Tcimpidis got almost hanged. Certainly, there has to be a better way to stop hackers.

In the near future, hackers (those who "crack" systems and software), phreaks (those who steal access numbers and codes from phone companies) and pirates (those who download copyrighted software to friends illicitly) will find it increasingly difficult to do what they're doing, as the proper legislation is passed against them. Pirates, hackers, phreaks: Beware. Already the FBI may be watching you, ready to move to stop you at the right time. Because soon there will be legislation, if the software protection councils being set up by the large software manufacturers have their way.

In the meantime, we'd like to hear from our readers. What are *your* answers to the problems of pirating, hacking, and phreaking? We'll publish your comments in a future issue of Entry.

Our CompuServe ID:

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Call us!

Next issue: We'll explore business uses of bulletin board systems, how lawyers telecompute, and reviews of "Adult" (NOT necessarily X-rated) bulletin boards. Plus a lot more on inexpensive telecommunications software and modems. Watch for it!

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AN ENTRY BBS?

Entry Magazine will soon have its own BBS, with limited access hours. See next issue for details.

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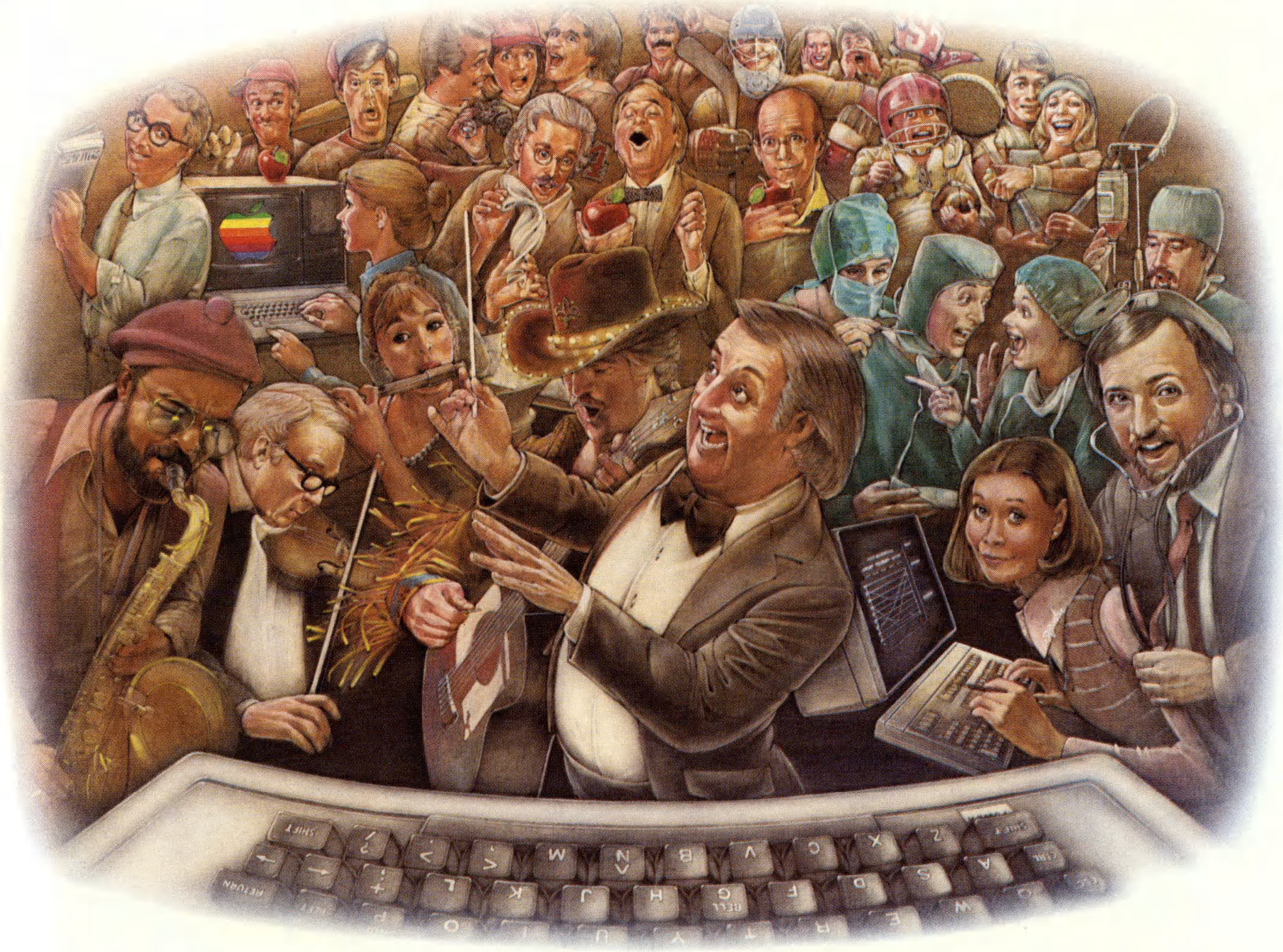

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